ENGINEERING NEWS-RECORD

Sam Baxter: He shines in a Golden Decade *p. 37*

E B POWER
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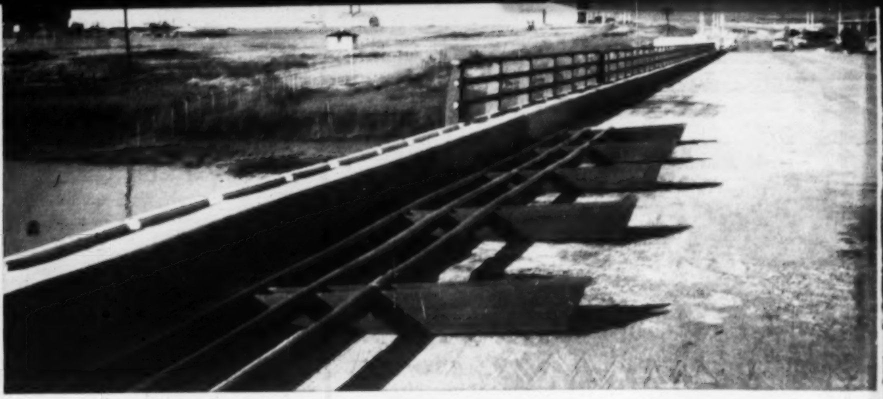
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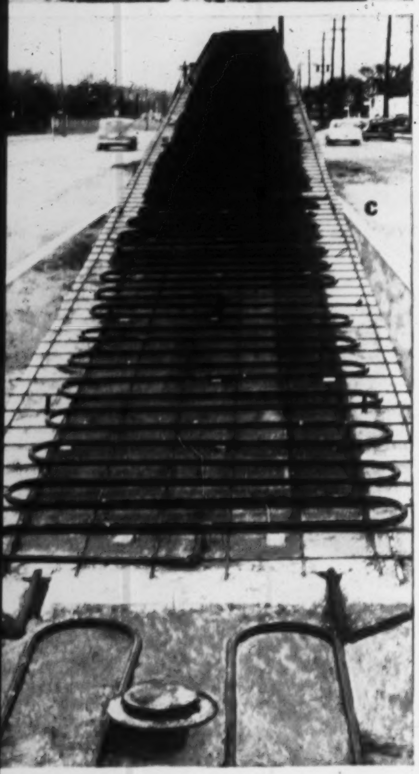
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Wrought Iron's corrosion resistance and easy workability earn top priority in these highway applications

a Wrought Iron railings offer high impact resistance because of their great structural strength. Easy to work and easy to weld, wrought iron railings stand up well in corrosive atmospheres.

b Wrought Iron drainage lines assure uninterrupted service so essential in keeping high speed traffic lanes open. No costly maintenance or repairs with this durable piping material on the job.

c Wrought Iron snow melting systems like the one on this bridge ramp, combine corrosion resistance with rugged strength, low coefficient of expansion with concrete, and easy fabrication properties.

d Wrought Iron scuppers serve as low-cost catch basins in bridge drainage systems. Cindering and salting and alternating wet and dry conditions have proved relatively harmless to this rugged material.

e Wrought Iron curbing preserves concrete against icing salts, brine slush, drainage water and corrosive atmosphere. Wrought iron's resistance to corrosion stems from a unique structure of glasslike iron silicate fibers. Write for booklet, *Wrought Iron for Highway Construction*. A. M. Byers Company, Clark Building, Pittsburgh 22, Pa.

BYERS Wrought Iron Tubular and Hot Rolled Products

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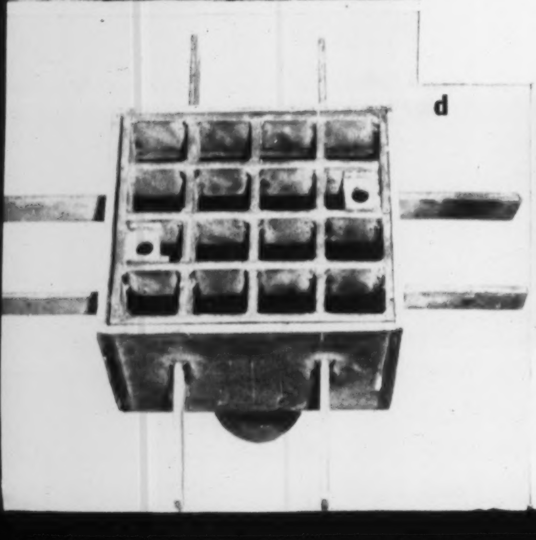
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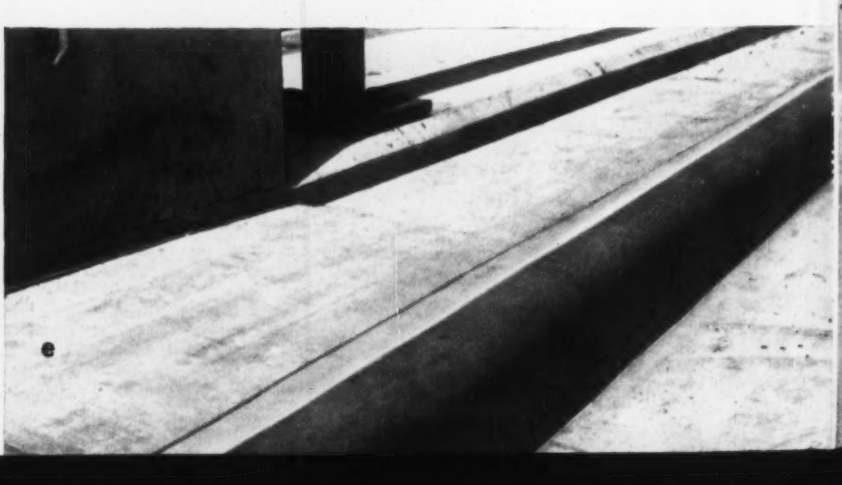
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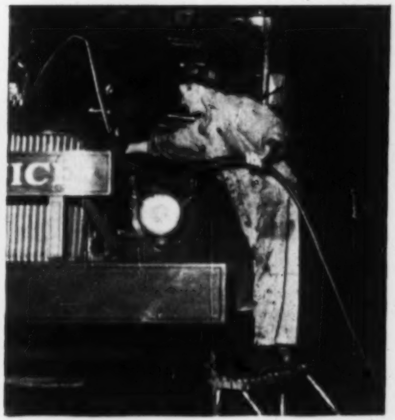

GOODYEAR INDUSTRIAL PRODUCTS

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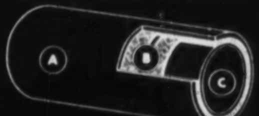

A Extra-tough cover resists weather, oil, sun, abrasion

B Vertical braids of high-tensile rayon cord for exceptional strength with great flexibility

C Tube that resists oil, gasoline, solvents, air and water

ORTAC (Oil-Resistant Tube and Cover) is available in long, continuous lengths in sizes from 3/16" to 1½ i.d.

It's really five hoses rolled into one!

You've never seen anything like ORTAC by Goodyear. With this one hose, you can feed compressed air to drills—gas up trucks and rolling stock—feed lubricants to equipment—carry water—even handle weak acids and alkalies should the need arise. In fact, it does all the jobs that used to call for five different kinds of hose—does them all easily and safely, too.

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It's easy to see, then, how a five-use hose like this eliminates any need for a large hose inventory — can substantially cut your costs on every job. For the full ORTAC story, contact your nearest Goodyear Distributor or write:

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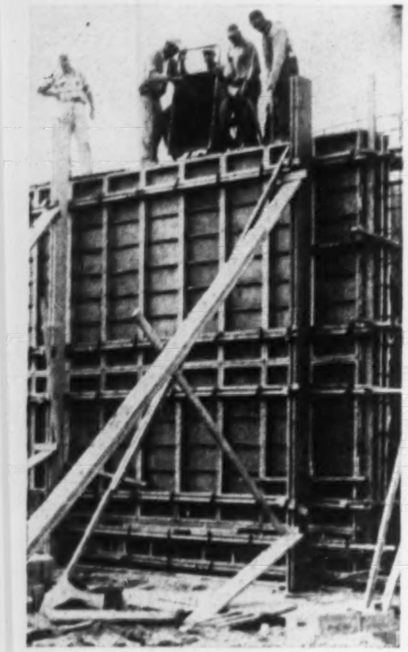
Symons **FIELD REPORT...**



Pouring Costs Cut 25% with Symons Forms . . .

Joseph R. Farrell, Inc., Philadelphia, general contractor, saved more than 25% in pouring costs on the new Cardinal Dougherty High School through the use of Symons Forms. 5,522 feet of Symons Forms were purchased for the job, and were used more than eight times. A total of 50,000 square feet of forming was erected for the 1600 yards of concrete.

Contributing to the speed and economy of the pouring was the use of 2" x 12" strong backs. The strong backs were held in place by 12" standwall ties used as strong back ties to make the horizontal joints stay plumb for the 18 and 20 foot walls. The strong backs permitted continuous pouring of the foundation walls.

With your plans, our engineers will prepare a complete form layout, bill of materials, and make recommendations for the most efficient and cost saving method of forming.

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Workmen strip forms while a new pour is started.

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in digging like this means
REPEAT ORDERS!

15

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Wherever you go you hear it—"That Northwest is a *real* Rock Shovel!" It's not an advertising claim. It has been proved over and over again—on the turnpikes, on the seaway, on the great dams of the West—with contractors both large and small. The greatest endorsement of Northwest dependability, Northwest output, and the ability of Northwest equipment to make money comes from the continuous expansion of Northwest fleets in the hands of reputable contractors.

Latrobe Construction Company of Latrobe, Pa., has used Northwests for years and is now operating its fifteenth — the fourteenth repeat order for Northwest equipment.

Pictured, is one of two Northwest 80-D's on the Fort Pitt Tunnel in Pittsburgh, Pa. The job calls for 300,000 yds. of material (mostly rock) at the tunnel portal. It is output in digging like this that makes repeat orders—high output and that marvelous Northwest quality of always being ready to go—they are the secret to making money.

Northwests have the advantages for rock digging—they are built for it. They have features you should know about. Ask a Northwest man to give you full details or write for a catalog on the size machine you need.

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...for treating domestic and industrial wastes

18-month test shows HI-CONE system operating costs are 44% less!

than air diffusion system

- TESTS PROVE LOWER POWER COSTS!
- LOWER MAINTENANCE COSTS!
- BETTER EFFLUENT

In the selection of sewage treatment equipment, the two most important factors are operating cost and effluent quality.

These figures from the annual report of the Manchester, England, Rivers Department, *prove* the superiority of the Hi-Cone! They're based on the operation of activated sludge plants (including a Hi-Cone System and a diffused air system) under strictly comparable conditions over a period of 18 months. Manchester is a pioneer in treatment by the activated sludge process, having first conducted experiments and tests in 1913.

Hi-Cone's power consumption was lower! Horsepower demand per million gallons treated per 24-hour day for the Hi-Cone System was 34.9% lower than the air diffusion system.

Hi-Cone's total operating costs were lower! Relative costs per million gallons treated were 42.1% lower than the air diffusion system.

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Please send the following descriptive literature on the Hi-Cone:

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GLASS LINED INSIDE AND OUT

ALL COMBINED TO MAKE AN OUTSTANDING HOUSE-TO-STREET SEWER FOR MODERN HOME REQUIREMENTS

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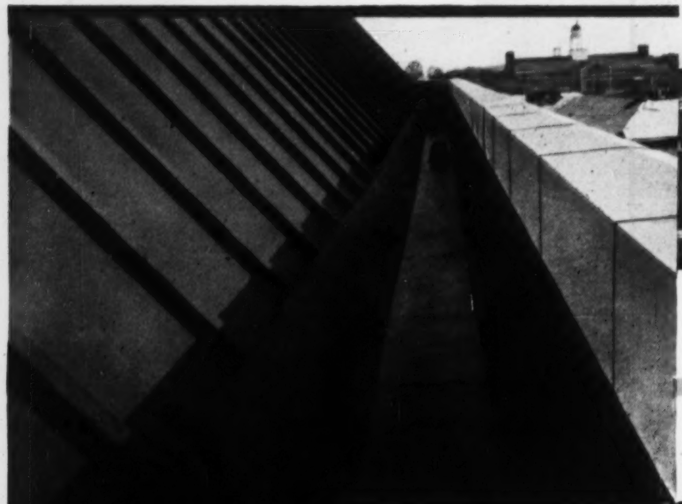
SINCE 1900

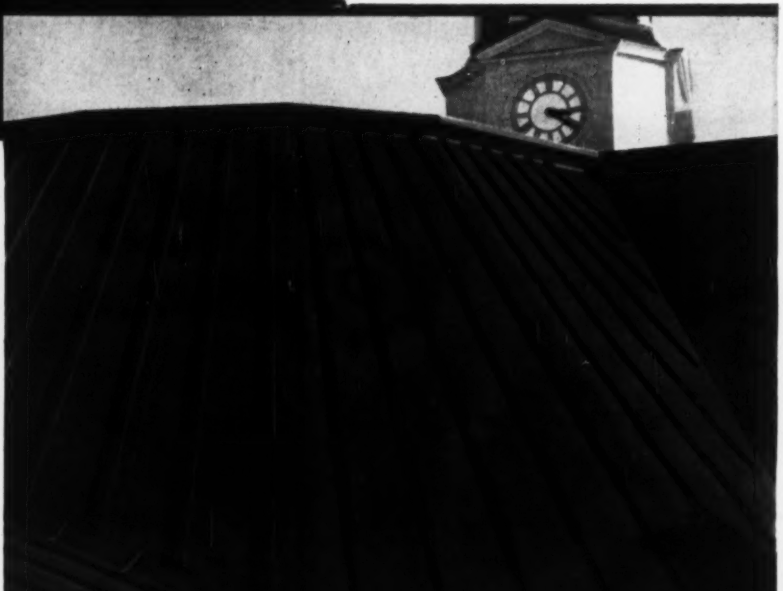
American Vitrified Products Company
CLEVELAND, OHIO

BUILT TO LAST—Here you see section of batten seam roof with parapet flashing and gutter. Note neat, clean installation that can be made when Revere Copper is installed by skilled workmen according to recommendations made in Revere's 110-page Brochure, "COPPER AND COMMON SENSE." Shown in background is one of the expansion joints which is used to insure gutter against buckling and cracking when copper expands and contracts with temperature changes.



CLOSE-UP OF SECTION of batten seam roof on Chapel Building which was installed according to recommendations made in Revere's Brochure, "COPPER AND COMMON SENSE," as specified by the architectural firm of LARSON AND LARSON, Winston-Salem, N. C.

J. FREDRICK LARSON who has earned a splendid reputation for the fine work he also has done at Colby, Bucknell, Lehigh and other colleges says that, to his way of thinking, the "COPPER AND COMMON SENSE" Brochure is a "must" for every architect and contractor.



"The 400,000 lbs. of sheet copper used on the buildings of Wake Forest College emphasize the matchless characteristics of this ageless metal in building construction."

Says FRANK COX, *President*
Cox Roofing Company, Winston-Salem, North Carolina

"One of the beauties of copper," continued Mr. Cox, "is that it is equally at home in the traditional or the most modernly designed building.

"Of course, the things about copper which are most appreciated by sheet metal contractors like myself are its workability, the ease with which it is soldered and formed, the fact that its enduring qualities have been proved for so many centuries that its wearability is never questioned. It's the kind of material on which you can safely stake your reputation, which is the kind of material I like to work with."

Leading architects, too, are partial to this centuries-tested metal because of its extreme flexibility in design and its ready acceptance among those who pass on specifications. In writing specifications they have found there is no "or equal" for copper.

An added service to architects and sheet metal men is the marking of all Revere Sheet and Strip Copper with the correct gauge and temper in water-soluble ink.

Ask your distributor to show you. Also ask him about the neat-appearing, weather-tight, easy-to-place Revere-Keystone 2-Piece Cap Flashing*.

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CHAPEL AND GYMNASIUM BUILDINGS at Wake Forest College alone took 125,000 lbs. of Revere Sheet Copper for roof, gutter and flashing work. Copper used on all buildings amounted to some 400,000 lbs., most of which was supplied by Revere.

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SERVICISED

membrane forming concrete curing compounds

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4. **Save time, labor, material**
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WHITE PIGMENTED TYPE Servicised White Pigmented Curing Compound provides a film or membrane capable of reflecting heat. It is widely used in areas where atmospheric temperatures exceed 80°F., and properly applied, will reduce concrete temperatures approximately 15°F. Excessively high temperatures during the early hardening period tend to jeopardize setting of concrete and reduces its final strength. High quality inert pigments added to the basic compound also prevent too thin or uneven coverage, as improper application is readily seen. Used on all U. S. Engineers work.

CLEAR TYPE Servicised Clear Curing Compounds are available in both Wax-Resin and Resin Base Types. Only pure synthetic resins are used with carefully controlled proportions of oils and waxes, etc., in a petroleum solvent to insure a clear, impermeable membrane. Both types can be supplied with a fugitive dye which materially assists in securing proper coverage, and which disappears after application.

WAX-RESIN BASE. A general purpose compound, usually used on mass concrete, pavements. Has excellent water retention properties, allowing slow curing of the concrete which eliminates checking. Dries rapidly and forms a film of uniform texture.

RESIN BASE. Recommended for buildings, offices, architectural concrete, etc. The pure resins, oils and other ingredients present a clear film which does not materially alter the appearance of concrete and it permits early application of adhesives, paint, etc.

AIR ENTRAINING AGENT Servicised Air Entraining Agent is a highly active, homogenous and clear solution. A relatively small quantity produces maximum air dispersion, yet it is not so critical as to create wide fluctuations in the amount of entrained air should slight variations in the amount used occur. It will not settle out in storage or gum the dispenser, and its action is not jeopardized by the presence of Calcium Chloride. Servicised Air Entraining Agent meets all official specifications, comes ready to use and requires no additional ingredients or treatment before being used. Available in 5 gallon and 55 gallon drums.

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Reader Comment

Employees Form Club

Sir—An engineering club has been formed by employees of the Metropolitan District Commission, Hartford, Conn. The club is made up of employees in engineering and technical classifications engaged in various duties of water purification and distribution, heavy construction, sewage disposal and regional planning. Membership has grown to 100 out of the potential of 129 employees in classifications from engineering aide to executive.

Purposes are: To sponsor professional and technical seminars and meetings; to encourage research and writing by members; and to sponsor social activities.

We think our club may be unique but would appreciate hearing from other such organizations within companies of public utilities—if they exist.

A. E. Kuras
Secy.-Treas. Metropolitan District Engineer's Club
115 *Broad St., Hartford, Conn.*

Congressman Replies

Sir—My attention has been called to a letter by Mr. Ben Moreell, chairman of the board, Jones & Laughlin Steel Corp., appearing in your June 27 Reader Comment section. As a member of the Hoover Commission I analyzed the findings of Mr. Moreell's Task Force on Water Resources and Power.

In his letter, Mr. Moreell refers to a "rearrangement of figures" on my part, subtly suggesting that I have manipulated the figures to show a false result.

What I was trying to do, in fact, was to expose the fantastic and misleading computations of the task force in its endeavor to compare federal power costs unfavorably with those of privately owned ultilities and to lend credence to the argument that federal power projects are subsidized.

My analysis showed that, by the task force's own figures, federal power projects as a whole covered all their operating, replacement and financial costs over a 20 year period, with a substantial return on the public investment, rep-

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

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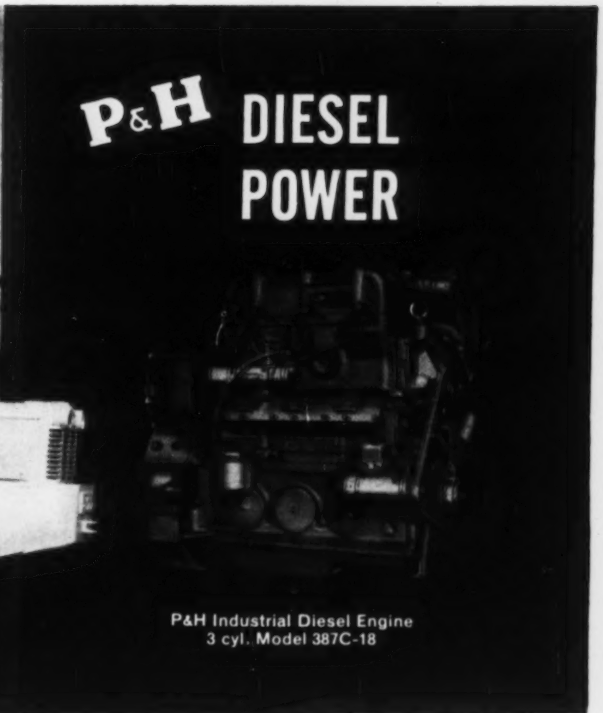
SPEEDALL

Pettibone SPEEDALL Tractor Shovel
Model 250—3¼ cubic yard capacity



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3 cyl. Model 387C-18

the best combination for

EXTRA POWER . . EXTRA PRODUCTION

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The P&H Diesel provides other profitable performance features:

- **Faster Starts**
- **Better Idling**
- **Lower Fuel Cost**
- **Compact Design for Easier Maintenance**
- **Smaller Parts Inventory**

Efficiency and simplicity of P&H Diesel design assure lowest operating and maintenance costs. The P&H Diesel operates economically on low cost No. 2 diesel fuel. It has 25% fewer parts. All wearing parts are interchangeable.

Specify the P&H Diesel for all your construction equipment. For additional information on P&H Diesel powered SPEEDALLS see your Pettibone dealer or write for Bulletin Z-26.

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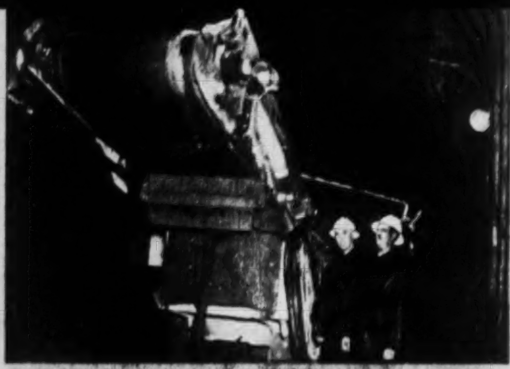
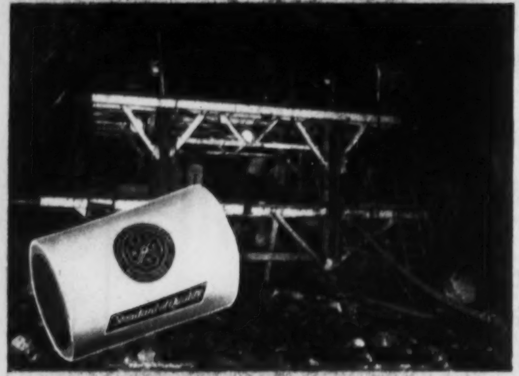
P&H DIESEL ENGINE DIVISION, Crystal Lake, Ill.

GOODALL QUALITY *Pays Off...*

On Those Tough
TUNNEL JOBS
AND OTHER HEAVY-DUTY OPERATIONS





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These belts, developed especially for use on Conway Mucking Shovels, have demonstrated their record-breaking strength and stamina on most of the largest modern tunnel jobs. Typical example: The 7,042-ft. railroad tunnel at Bingham Canyon, Utah, where "Wear King" belts on some of the machines handled over 35,000 cu. yds. of excavated material without replacement.

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COATS, JACKETS, OVERALLS... in rubber, oiled and latex. Style 338 Coat is the contractor's favorite. Style 80 Jacket with Style 81 Overall makes the ideal shaft suit.

"SSS" TOE SAVER® BOOTS. Smooth, tough, flexible jet black rubber, heavy duck lined. Cushion insole. White cap over reinforced steel toe tested to withstand 2,000 lbs. pressure. Tire-tread soles. Hip, Storm King and Short. Permanently affixed size markings.

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"If it's GOODALL it MUST be GOOD!"

The products briefly described here are merely selections from the complete Goodall Quality Line of Contractors' Hose, Belting, Clothing and Footwear for every type of service. Contact our nearest branch for details, or write for catalogs covering specific items.

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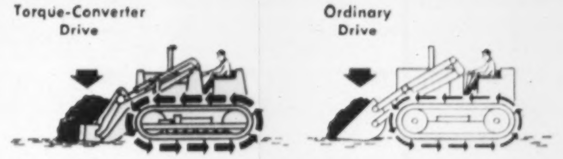
quicker...easier... at less cost per yd.

TERRATRAC
34

For big yardage production, no other crawler in its class can match the combination of power, speed and maneuverability you get with the new *2 cu. yd.* Case® TerraTrac® Model 1000 tractor-shovel. It not only gets bigger loads faster . . . it also turns and maneuvers faster with a new *COUNTER-ROTATING* Terramatic transmission that drives one track *forward* and the other track *reverse* at the same time.

Exclusive "Knock-out" dumping action cleans bucket instantly of stickiest material, while extra-high (9′6″) clearance lets you back away from big trucks or hoppers without stopping to raise bucket. You also get *exclusive torsion-bar track suspension, automatic track roller lubrication,* PLUS many other advanced features that will increase your production, cut your costs.

See this revolutionary higher-speed 2 cu. yd. rig now at your Case Industrial Dealer's, or mail coupon for catalog and free eye-opening demonstration.



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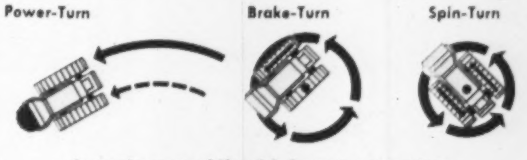

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Never before have so many important and improved features been combined in a bucket as in the new OWEN "SCL" wide-type materials handling clamshell bucket . . . redesigned from bowl to head.

OUTSTANDING IS THE 75% TO 100% INCREASE IN CABLE LIFE.

Here's how it's done. The closing line now leads straight through the center plane of the head of the bucket to first lower sheave, thus eliminating bending of the closing line around upper guide sheaves as in conventional block and tackle and lever arm buckets.

Reinforced arms and crosshead afford greater durability without adding weight to bucket. Available in sizes ranging from 3/4 to 3 cubic yards inclusive.

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Berkeley, Calif. • Fort Lauderdale, Fla.

resenting 16% of the total revenues.

Mr. Moreell states that my "rearrangement clearly excludes the amounts of computed taxes". The "computed taxes" of the task force were a grossly inflated average figure of 33.4% of electric operating revenues assumed to represent the tax costs of privately owned utilities.

I cited reasons why utility tax costs were considerably lower than 33.4%. Furthermore, I pointed out that the task force was not warranted in assigning a tax component to federal power sales at wholesale based on an estimate of tax costs paid by retail utilities. Available figures on tax costs of utilities selling at wholesale indicated that the 16% of operating revenues representing the margin of surplus on federal projects was more than enough to cover a hypothetical tax component which reflected tax costs of wholesale utilities.

The Hoover Commission's report on water resources and power, which was based on the prodigious but not too rewarding labors of Mr. Moreell's group, led me to present a dissenting statement almost as long as the commission's own report. To any of your readers who are interested in pursuing this matter further, I suggest that they compare my dissenting statement and the commission report. (The commission chairman did not see fit to print both in the same volume.) I believe any fair-minded reader would see that if any "rearranging of figures" was done to reach a pre-conceived conclusion, the fault lies at Mr. Moreell's door.

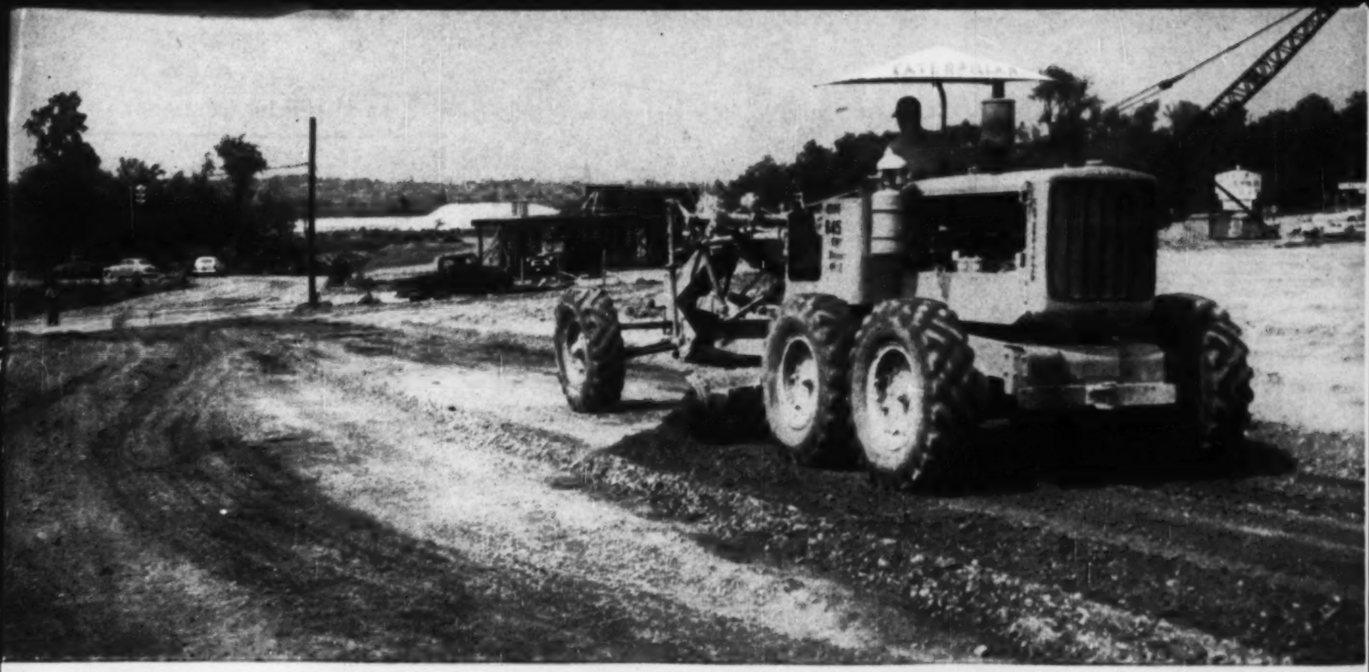
As a final note, I can't help but comment on Mr. Moreell's pointing with pride to the use of byproduct blast furnace gas and boiler coal in conserving resources and developing electric energy for the steel works. For more than two generations the federal government has been developing the concept of harnessing its rivers for byproduct electricity. Mr. Moreell is a man dedicated to arresting that development by a logic which he doesn't apply in his own business.

Chet Holifield
Chairman
Military Operations Subcommittee
House of Representatives
Congress of the United States

Home Air System

Sir—I believe the article "Air System for Home Heats and Cools Efficiently" (ENR July 25, p. 73) describes a system patented several years ago by architect T. Marion Heter of Sterling, Kan. Actually, it is little more than an extended plenum system which has been used in the heating and ventilating in-

Industrial Wheel and Crawler Tractors • Loaders • Dozers • Backhoes • Engines



Teer's CAT* No. 12s help build approach to Patapsco River Tunnel

An important new highway link for North-South travel is the Patapsco River Tunnel, south of Baltimore, Md. It will create a direct connection between Rt. 40 and U. S. 1 without bucking mid-city traffic.

Nello L. Teer Co. of Durham, N. C., is building a 2½-mile section of the four-lane divided expressway leading to the tunnel. The contract calls for moving 1,200,000 cubic yards of earth. Teer's spread on this job includes 12 Caterpillar DW20 Tractor-Scraper units, six D8s, a D9 and two Cat No. 12 Motor Graders.

Good haul roads contribute to low-cost earthmoving, and keeping roads in shape is a motor grader job. With its rugged construction, balanced design and dependable four-cycle Cat Diesel Engine, the No. 12 is built for top production around the clock. Positive-acting controls, easy blade positioning and excellent job visibility all help the operator do more work with less effort. The exclusive Caterpillar oil clutch operates smoothly many hundreds of hours without adjustment. Tubeless tires, at no extra cost, reduce tire down time. And in-cab starting, electric or gasoline, is standard.

Your Caterpillar Dealer not only sells these top-performance machines but takes a personal interest in protecting their long work life with reliable parts and service. See him today.

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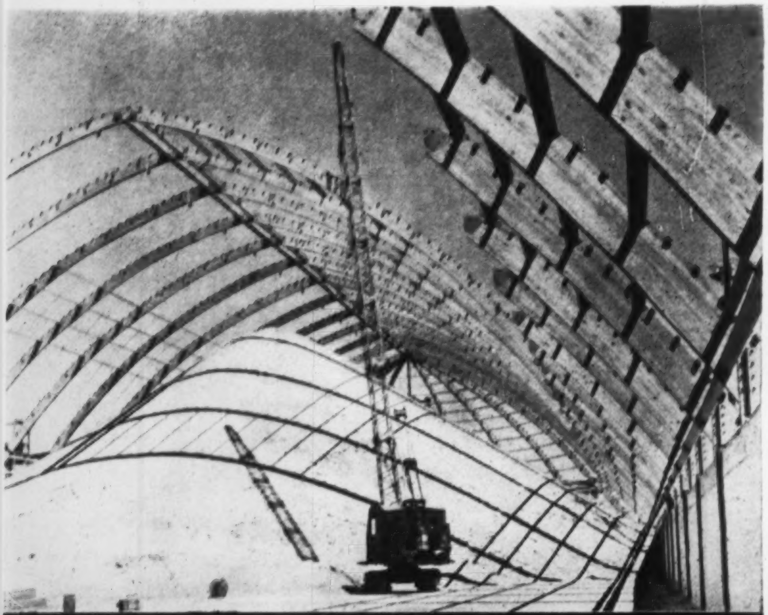

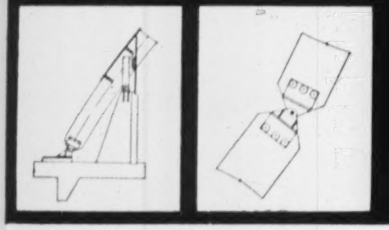

Above: POTASH COMPANY OF AMERICA, warehouse number 7, Carlsbad, New Mexico, is 179'-8" x 400' plus half circles of 179'-8" diameter at each end. Left: Concrete pilaster wall supports cantilevered timber buttresses. Center: Hinged connection joins timber buttress to arch.

2¼ acres of permanent low cost space... with glulam buttressed arches by Timber Structures, Inc.

In construction of this 2¼-acre clear span warehouse, POTASH COMPANY OF AMERICA used glulam buttresses and arches to save $60,000 over the cost of other framing. At the same time they prevented possible damage to the framing through chemical action of the stored material, for timber is inert to chemical action, and requires no special protection for use with chemical materials.

Glulam timber buttresses resting upon a concrete pilaster wall support the arches which frame the roof structure of the warehouse. By using buttresses and arches instead of continuous arches it was possible to reduce the section size of the arches, with a substantial saving in cost.

Imaginative use of timber for your wide span structures may make similar economies for you while providing permanent, maintenance-free construction. For information on engineered timber members, see our insert in Sweet's Architectural and Industrial Construction files, or consult your nearest Timber Structures representative. Also write for comprehensive brochure, "Buildings for Tomorrow", which will be sent free upon request.

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dustry for a good number of years. Whether or not the return registers are located in the outer periphery or on the inside usually has little bearing on this type of application unless there are many drapes, then it helps in winter but not in summer.

WILLIAM F. RYAN
Ryan Engineering Co.
Salina, Kan.

Director Omitted

SIR—We have read your article on the Prestressed Concrete World Conference (ENR Aug. 8, p. 23) and would like to bring to your attention one omission.

Concerning the new directors elected to the Prestressed Concrete Institute, your report neglected to mention that R. M. Dubois, president of the Freyssinet Co., New York, was elected to a one-year directorship.

IRWIN J. SPEYER
Freyssinet Co., Inc.
New York, N. Y.

Fast Dambuilding

SIR—In the Aug. 1 issue of Engineering News-Record, you state on page 26 in a caption titled "Pelton's Ski Jump Spillway Nears Completion" that the 120,000 kw powerhouse is to be in operation by late next year (1958). We have scheduled trial operation of the first 40,000 kw unit for Oct. 28, 1957, just 19 months after the start of construction, and expect to have all of the three units in operation Feb. 3, 1958.

J. B. DOTTERER
Construction Superintendent
Ebasco Services, Inc.
Madras, Ore.

CALENDAR

Public Works Congress and Equipment Show. American Public Works Association, Grand Exhibition Hall, Philadelphia, Pa., Sept. 22-25.

Southeastern Association of State Highway Officials, 16th Annual Meeting, Atlanta, Ga., Oct. 1-3.

Federation of Sewage & Industrial Wastes Associations, Hotel Statler, Boston, Mass., Oct. 7-10.

American Institute of Steel Construction, thirty-fifth annual meeting, Hotel del Coronado, Coronado, Calif., Oct. 7-10.

Society for Experimental Stress Analysis, annual meeting, Hotel El Cortez, San Diego, Calif., Oct. 9-11.

National Safety Congress and Exposition, Hotels Conrad Hilton, Congress, Morrison, La Salle and Hamilton, Chicago, Ill., Oct. 21-25.

Engineers' Council for Professional Development, Engineers Joint Council, joint annual general assembly, Hotel Statler, New York City, Oct. 24-25.

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. . . Reports Fisher Contracting Company

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When you use Timken multi-use and carbide insert bits, your drillers save time. Dozens of different bits fit the same drill steel. You can change bits as drilling conditions change; but you use the same drill steel. And the special shoulder union of Timken bits increases bit life because it protects threads from drilling impacts.

Timken rock bits are made from the Timken Company's own electric furnace fine alloy steel. No other rock bit manufacturer goes this extra step to assure you of the highest quality. Why not let us help you select the best bit type for your drilling jobs? Write: The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".

See the first Timken Televent hour, in color, "Eleven against the ice—story of the Antarctica Turnpike". NBC-TV, Monday night, September 23rd.

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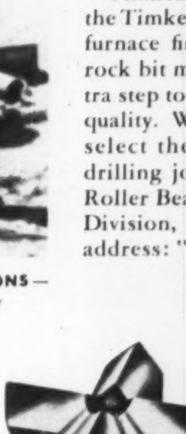
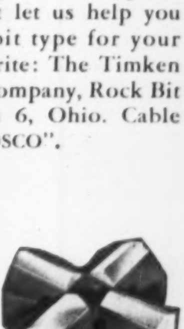

Timken threaded multi-use rock bit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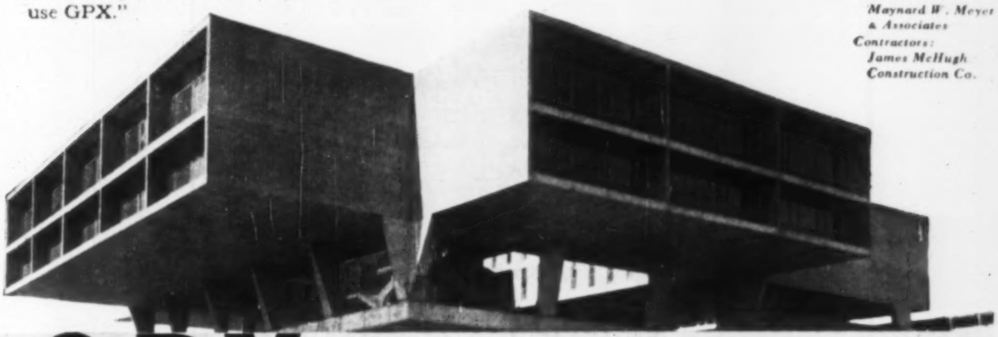

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Manufacture of such products obviously demands absolute control over processing. To meet these critical requirements, equipment had to be selected with extreme care. For dependable control of pipelines which supply essential steam, water, air-conditioning, and other services, Jenkins Valves were prescribed.

This confidence in the extra measure of efficiency and reliability of Jenkins Valves has shown up in the specifications of important plants and buildings for nearly a century. It is symbolized by the Jenkins Diamond and Signature trade-mark. The valves that bear this famous mark cost no more.

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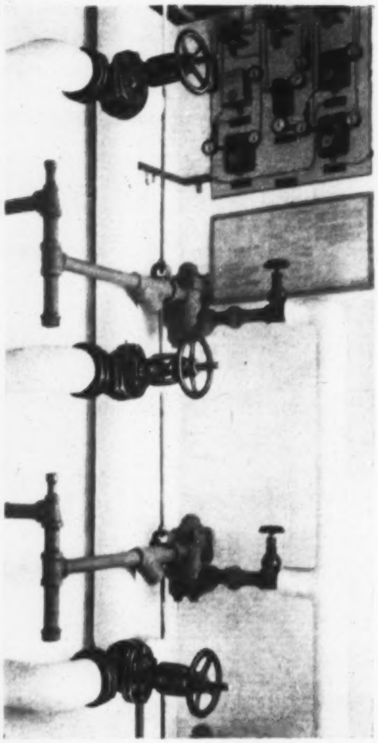
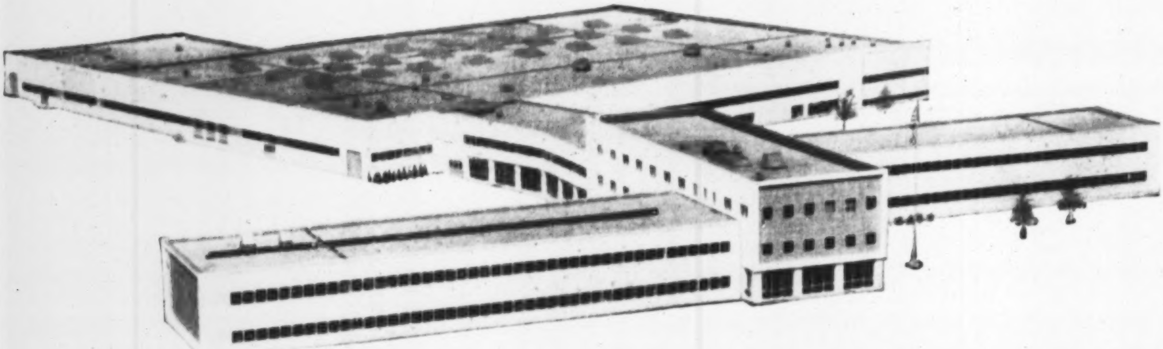


Jenkins Fig. 651-A iron body gate valves and Fig. 370 bronze gate valves on the air conditioning system.



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ENGINEERING NEWS-RECORD

Vol. 159, No. 12 September 19, 1957

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THE CONSTRUCTION WEEK

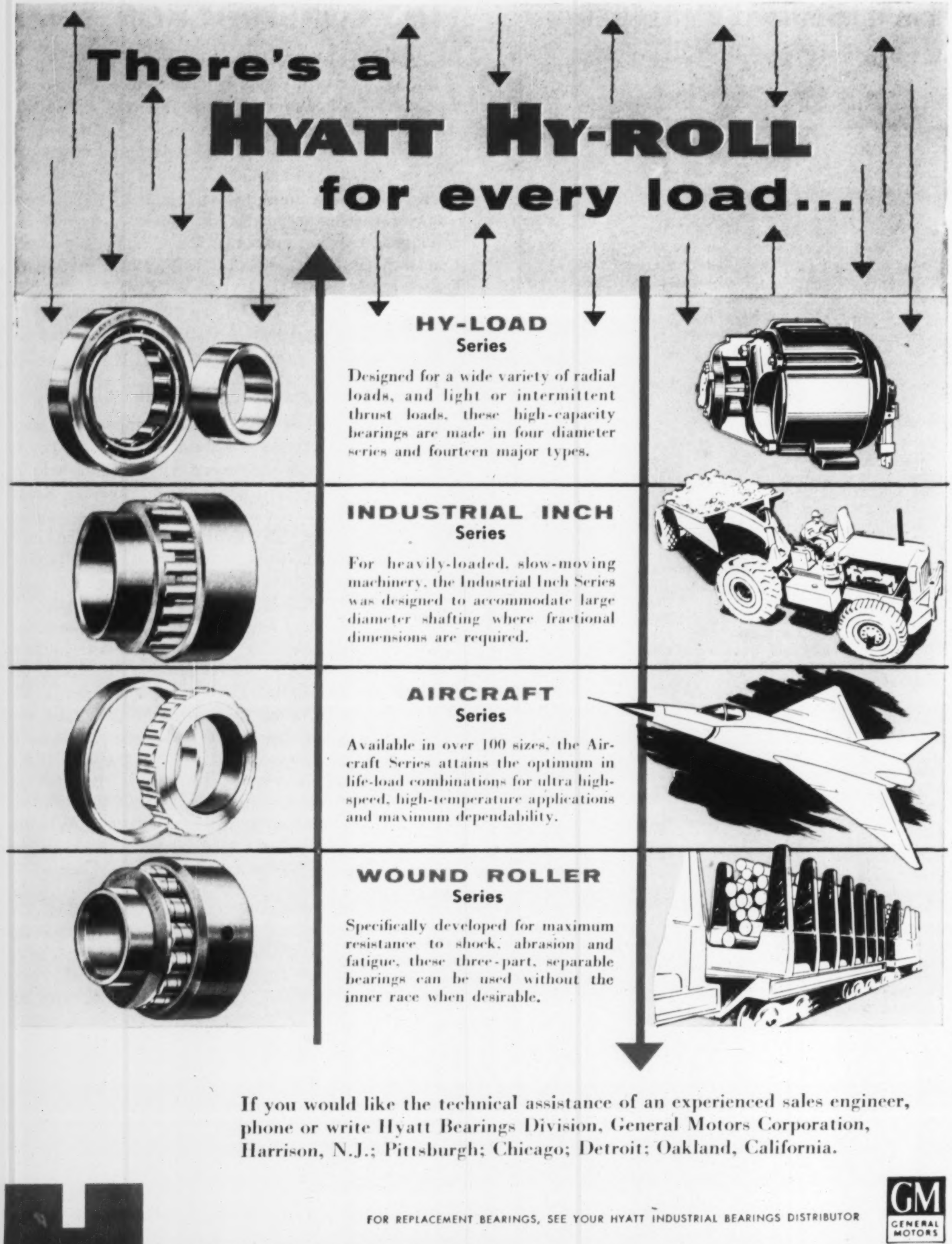
HIGH OR LOW—A U.S. toll committee is holding hearings on whether St. Lawrence Seaway tolls should be low or high: Low enough, as potential beneficiaries argue, to lure traffic, or high enough, as representatives of railroads, Atlantic Coast ports and others ask, to pay off the $140 million U.S. cost in 50 years. By law, the Seaway must be self-liquidating. The committee is representing the St. Lawrence Seaway Development Corp., builder of the U.S. portion of the Seaway. Similar conferences will be held in Canada.

TUNNELING RECORD—On a highway tunneling job on U.S. 80 near Bisbee, Ariz., early this month Peter Kiewit Sons Co. drove a 42 ft wide, 21 ft high heading 105 ft through weathered granite in six days. Two 8 hour shifts per day are working; excavation totals 40 cu yd per lin ft; and the jumbo is equipped with seven drills. Rock removed per day amounts to 18,900 cu ft, compared to the world record 31,725 cu ft held by Swedish miners at Harresele Tunnel. However, Kiewit can lay claim to a new world's record for rock removed per day per driller: 2,700 cu ft, compared to 2,562 cu ft by the Australians from 24 ft dia Ecumbene Tunnel.

ANSWER TO UNITY PROPOSAL?—Joseph W. Barker, president of Engineers Joint Council is scheduled to speak Oct. 14 at the convention in New York of the American Society of Civil Engineers. His subject: Unity in the Engineering Profession. Mr. Barker had contracted for the talk and its title way back last spring, before the American Institute of Electrical Engineers sprang its unity proposal (ENR July 18, p. 23)—a proposal that would strip EJC of all its professional activities, leave it only the coordination of member-society technical affairs. Whether EJC's president will say what he really thinks of this idea remains to be seen.

SEWERS ARE WHERE YOU FIND THEM—Gas City, Ind., was about to spend $25,000 for drainage facilities under a storm water relief project. They'll get same for $300—the price of repairing an old sewer which they just found. It had been built 60 years ago and abandoned 25 years ago—why, no one knows.

WANTED: COW TEACHERS—Cattlemen in the Magdalina section of New Mexico are currently battling the State Highway Department on the question of educating cows. Here's why—if present Highway Department plans are followed, a section of U.S. Route 60 will cut into the renowned Magdalina stock driveway and the cattle are supposed to cross the road through a 140 ft long, 7 ft dia pipe underpass. Cow men say the animals won't go through the tunnel. Chief highway engineer Lawrence D. Wilson says the cattle will use the structure "with a little training."



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WASHINGTON OBSERVER

- **Realtors criticize Cole's criticisms**
- **Mortgage money outlook brightens**
- **New report on anti-blast design**
- **Unbudgeted starts under new review**

- **Highway planning for metropolitan areas is better coordinated than some land-use planners would have you believe.** That's what industrial realtors say in response to Housing Administrator Albert Cole's implied criticism that highway engineers are locating today's new arterial routes where they may block the best possible future suburban expansion (see p. 26).

At a recent Hartford symposium on this problem, Mr. Cole was joined by a large group of land planning experts who criticized highway engineers for taking short, rather than long, views on such things as land values, uses and tax yields.

The Society of Industrial Realtors takes exception. It has been sponsoring meetings of state and federal officials, with special emphasis on location of new arterial routes so as to stimulate orderly future growth.

Washington consultants came away from the Hartford meeting with a feeling that the weakest link in coordination is within the federal government. They brought back the story that the two top government officials concerned—Bertram D. Tallamy on highways; Mr. Cole, on urban development—did not meet until Mr. Tallamy had been in his top federal job for about eight months.

- **More mortgage money should be available by the year's end.** That's the optimistic tenor of current talk you hear among builders, realtors.

The reasoning: Demand for credit from other sectors of business is leveling out and may be entering on a period of slight decline.

Interest rates will remain high. Inflation is still the Eisenhower Administration's No. 1 domestic worry. No one in Washington thinks any early easing up on credit restrictions is coming soon from the Federal Reserve System. But signs of improvement in housing activity are beginning to show up. For one example, August housing starts, at an annual rate, passed the million mark. For another, FHA mortgage insurance applications in August involved 57,500 housing units—new and existing—the high mark since June 1955.

- **The entire construction industry will find food for thought in an upcoming booklet on new building techniques to minimize disaster damage.**

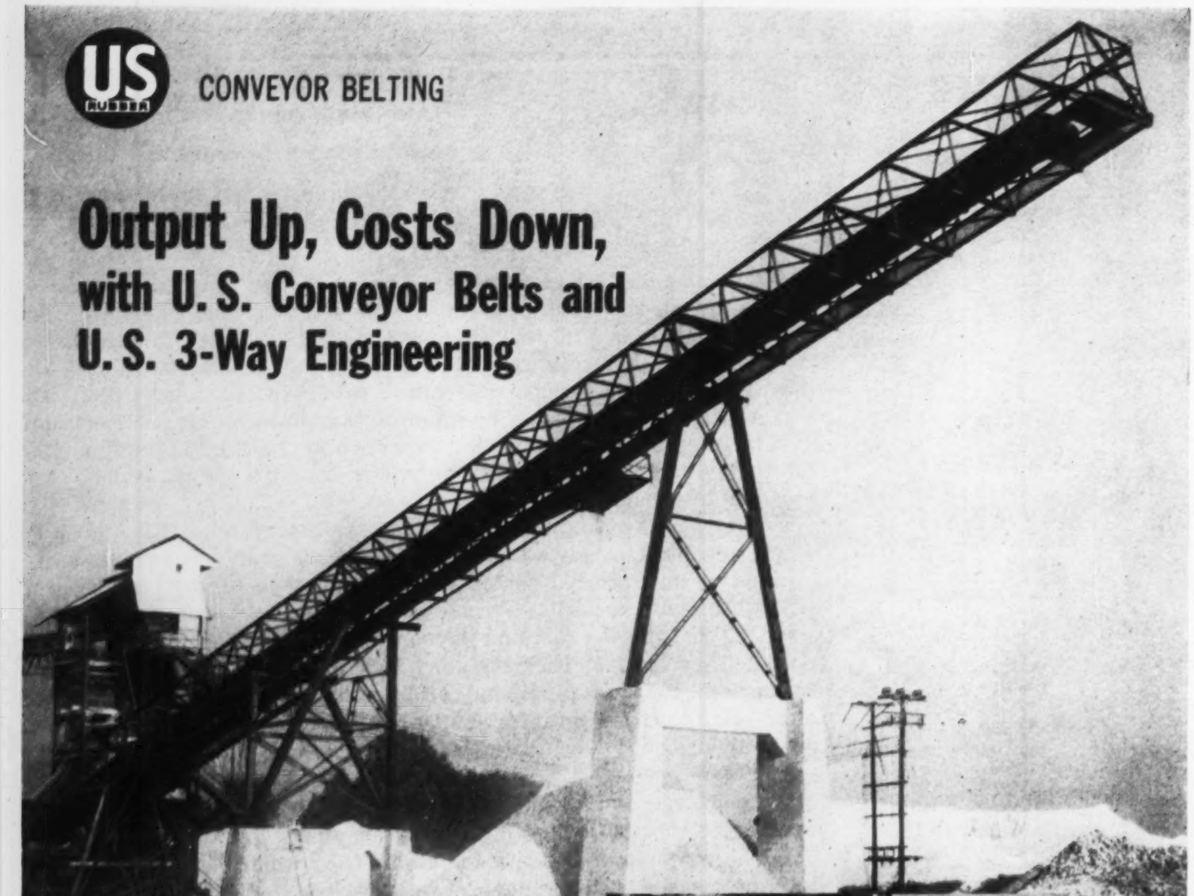
The Structural Clay Products Institute will publish it within the next couple of months. Basis for the booklet is a recent Nevada A-bomb test where results were encouraging for an experimental structure that featured a reinforced 10 in. windowless brick wall, clay tile beams and a flexible roof.

- **Unbudgeted new starts on Army Engineer projects are under close scrutiny at the White House.** Money requests are being drafted now for presentation to the 1958 session of Congress.

No hold-back is planned on the starting of $700 million worth of unbudgeted new projects that Congress added this year to the public works bill. But the White House can determine the rate at which these are pushed. And when President Eisenhower signed the bill he stated that Congress "seriously hampered the attainment of sound fiscal objectives" and he implied that the size of recommended future appropriations will be smaller than the projects' sponsors would like.

CONVEYOR BELTING

Output Up, Costs Down, with U. S. Conveyor Belts and U. S. 3-Way Engineering



In order to keep up with increased demand, last year a large limestone quarry in the East* installed five U. S. Conveyor Belts, after 29 years of using trucks exclusively.

"It takes less manpower to get the rock out of the hole by the belt system," says the plant engineer, Dick Campbell, "and cost per ton is less than with trucking.

"We investigated 8 other brands before choosing 'U. S.' Belts," he continues. "The main reason for our choice was the 'U. S.' reputation for knowing how to design and build the right belt for the job."

He's referring to U. S. Rubber's famous Three-Way Engineering in which "U. S." engineers work with the engineers of the quarry and the designers of the conveyor system. "We wanted the best and we got it," adds Campbell. "Performance-wise and dollar-wise we are getting the most for our money."

In any question involving materials handling, get in touch with any of the 28 U. S. District Sales Offices, or write us at Rockefeller Center, New York 20, N. Y.

In Canada, Dominion Rubber Co., Ltd.

View of #1 belt entering scalping screen and #3 belt climbing to screening plant. #1 is a 233 foot, 42" 6-ply U. S. Matchless® Style XN. #3 is a 1670 foot, 42", 6-ply U. S. Matchless Style CL.

• • •

Close-up of main stone belt with a capacity of 1200 tons per hour of 7" limestone. Note the excellent troughability of this U. S. Matchless Ustex-Nylon Belt.

*Harry T. Campbell Sons' Corp., Towson, Maryland.

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United States Rubber

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What Makes the Modern Engineer Tick?

> The engineer, relatively unknown quantity, a mystery to the laymen, perhaps a mystery to himself. His profile has been drawn in a study by industrial management.

- **Personality tests have been evaluated. The concept of the "typical" engineer has been explored**
- **Interests are examined, both the work-related kind and the outside interests, as far as they go**
- **Intelligence and abilities are rated high in comparison with those of other professionals**

Engineering Profession Psychoanalyzed

The engineer has been exposed—his abilities, interests and personality.

This relatively unknown quantity—a common curiosity through recent years, with all the talk of his scarcity and the wild want ad pleas for his services—has now been psychoanalyzed. His psychological secrets have been bared; his motivations are no longer mysterious.

The revelations come in a research report titled, "A Profile of the Engineer." It was prepared by the industrial relations consultants, Deutsch & Shea, Inc., of New York, and published by Industrial Relations News, weekly letter for personnel people, recruiters and industrial management in general.

Distributed to those who must recruit, employ and manage engineers of all types, the study is now available so that the engineer may see himself as others see him.

Found high-brow when it comes to mental ability, middle-brow in leisure-time tastes, the engineer, long a little-known quantity, has been drawn in a detailed word picture for all who would hunt, hire and hold him.

Admittedly, say the researchers, there have been investigations, surveys, studies and tests of the engineer. Their aim in this report is to tie them all together and see what they mean. This is a synthesis of "hitherto isolated and disparate studies . . . a coherent picture of the whole engineer."

The report is intended to be useful—useful to those most concerned with the problem of the engineer, with influencing his attitudes and impelling him to positive action, it says. (It doesn't say specifically that the engineer himself should or should not be included as concerned.)

What kind of fellow is this engineer? The researchers found answers on his personality in five highly regarded studies. There were "depth interviews", an "eight-picture abridgement of the Thematic Apperception Test", the "clusters analysis technique", and "an open-ended problem situation test." Such traits as neuroticism, physical drive, detail-mindedness, frankness and self-sufficiency—all were measured and weighed.

Apparently findings were very happily consistent, despite the different study techniques. Conclusion of the researchers: The engineering profession, with some exceptions, is composed of a remarkably homogeneous group, with a narrow range of temperamental variations. Research engineers and administrators may fall outside the pattern; most others can qualify—if they like—as "typical" engineers.

Check Yourself

	Yes	*No*
Are you satisfied with your work?	☐	☐
Have you a bachelor's degree in engineering?	☐	☐
Are you out of college four years?	☐	☐
Are you doing actual engineering?	☐	☐

If your answers are "yes", the profile drawn here could be yours.

Maybe the most atypical, say the researchers, is the research engineer. He is more theoretical and specialized than the others, more creative. He is enthusiastic, impulsive, and independent.

The typical engineer, on the other hand, is a strongly work-oriented, precise, tense, energetic, practical individual with little interest in intangible questions, little vision beyond the immediate problem, and little perception for subtle complexities. He works well with little supervision, yet respects authority. He has a strong sense of responsibility, is not overly mercenary, yet has sights on sizable earnings, says this report.

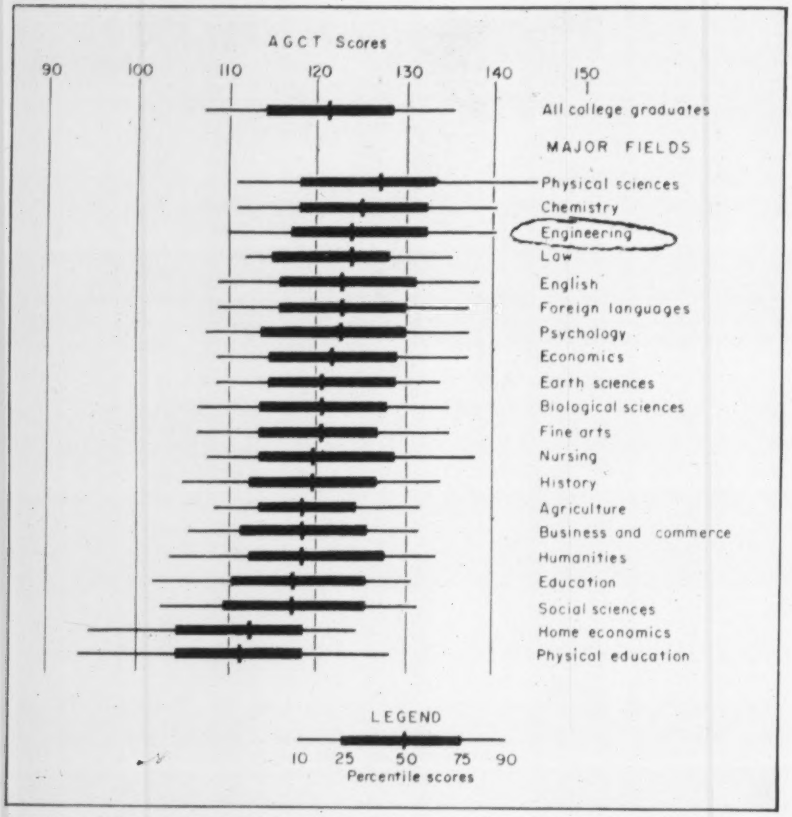
He is impersonal to the point of being insensitive to the needs of others, direct often to the exclusion of polite diplomacy; he is not really an introvert, says the report, just overly impersonal. And one author is cited in this report as finding the typical engineer so lacking in skill with human relations as to render him almost helpless in dealing with other people.

Other authors quoted find our typical engineer a poor executive or supervisor.

The easy way to describe the engineer's personality is describe what it is not, say the psychology researchers: He is neither snobbish, conceited, haughty, vain, silly, moody, indolent, nor introspective.

(Continued on page 24)

. . . How engineers rate in intelligence



ARMY GENERAL CLASSIFICATION TEST scores show engineers near the top.

One expert has come to the conclusion that the typical engineer is just an intelligent John Doe—a conventional, solid citizen.

Studies of the engineer's interests find him strong in the technical department, with a practical orientation. Reading preferences tend toward mass circulation and technical periodicals, avoid the high-brow cultural as well as low-brow magazines. Only 42% are regular readers of books.

The engineer goes for sports and for fussing around his home. Give him the outdoor life. And don't try to interest him in social problems, fine arts or culture, say the specialists.

He is a non-intellectual despite his high IQ. Intelligence—which one source for this part of the study defines as "the ability of the individual to solve what for him is a new problem, is the engineer's high card. Only 10% of the general population reaches the mean of his group. He was found in one investigation to do as well on tests measuring general intellectual ability as on engineering aptitude—and as well on verbal tests as on others. This, say the researchers, contradicts other studies that have declared the engineer a "non-verbalist, more capable along mechanical-spacial lines."

The accompanying bar graph, indicating scores achieved on the Army General Classification Test by college graduates with bachelor's degrees, shows our engineer high on the scale compared to other professionals.

Highly intelligent, but quite unimaginative, the typical engineer, "in failing to develop certain areas of his personality has paid the heavy price of over-specialization," concludes this psychoanalysis.

For those who would read more of it, "A Profile of the Engineer" is available: For $7.50 from Industrial Relation News, 230 West 41 St., New York City 36.

Which Profile Fits You?

Mr. Inside

THE DESIGNER—Able to visualize, but usually working with concrete facts . . . prefers the definite, intolerant of ambiguity . . . precise, neat, attendant to detail . . . intellectually specialized along mechanical and special lines, lacking somewhat in broad background, yet conversant with principles . . . lacks knowledge of human principles . . . a non-verbalist.

Prefers things to people . . . has constricted scope of intellectual interests, few cultural or aesthetic interests . . . is socially, economically and politically a conservative.

Mr. Outside

THE CONSTRUCTOR—Has abilities that put him into category designated as the "typical engineer" . . . likes the tightly scheduled operation . . . prefers concrete, orderly, and manageable mechanical tasks . . . is intolerant of ambiguity . . . precise, accurate, meticulous in approach to his work.

Has interest patterns and personality traits following closely those of the design engineer (left).

Mr. Topside

THE ADMINISTRATOR—Plans in broad perspective for long-range goals . . . competent, resourceful, sensitive to change . . . avoids complexities, delegates authority and responsibility, coordinates group action, makes decisions readily.

Has strong interest in dealing directly with people, has forsaken the technical problems once of such concern to him . . . takes interest in community affairs —and in cultural activities.

Is more decisive and dominant, yet has a genuine fellowship with those he supervises.

U. S. Road Sign Design Settled

Red-white-blue markers set as interstate standard for roads to be built under Federal Highway Act

Last week, new route numbers and a distinctive red-white-and-blue design for route markers were officially designated for the national system of interstate and defense highways.

State highway departments received maps, diagrams and full instructions from the American Association of State Highway Officials to enable their sign shops to go into production of the new route markers for interstate roads within their borders. Marker design and route numbers supplied to the states were those adopted last month by AASHO and accepted by the Federal Highway Administrator, Bertram D. Tallamy.

The completely distinctive, colorful, fully reflectorized interstate route marker was selected by the top officials of state highway departments from among a large assortment of alternate designs. Standard proportions of the chosen marker are show in an accompanying 24 x 24 in. dimensional drawing, forwarded to each state with red and blue color comparison samples attached.

The border and numerals will show up as reflectorized white on these new signs, the background in the upper portion surrounding the word interstate is reflectorized red, while the solid color in the larger, lower part of the shield is reflectorized blue.

Dimensions of the new markers also give a larger sign area than do AASHO's standard shields for existing U. S. routes. (These black-on-white U. S. route markers will continue in service on present highways with no change.)

On interstate highways themselves, roadside shields set up to mark the route and reassure the driver that he is on the right track will be 36 x 36 in. (Such markers on existing U. S. routes consist of a black outline shield and numerals on a square white plate measuring 24 x 24 in.)

Approach markers used to flag motorists as they drive up to an interstate route will be red-white-and-blue shields of smaller size, like the 24 x 24 in. interstate marker. This size will go up on intersecting U. S. or state routes and on arterial streets to indicate an interchange junction with an interstate highway.

To direct traffic in urban areas to an interstate route, the highway departments will erect 18 x 18 in. "trail blazer" shields along city streets or suburban arterials. Current AASHO plans call for use of this shield with a directional arrow and the word "to" on a disk to form a "trail blazer" assembly.

Other sign criteria given the states for marking of the interstate roads themselves include these instructions:

- To indicate an exit point to another intersecting interstate route, use the 36 in. shield on the exit guide sign assembly.
- Where an intersecting interstate route is being approached, two-mile and one-mile advance guide signs will each consist of a 48 in. black-on-white overall marker with 16 in. route numbers (of the intersecting route or routes) incorporated.
- To let the driver know the direction he is traveling on an interstate route (north or south, east or west), separate directional signs will be used in conjunction with the route marker shield.

Adequate specifications on colors and reflectance for immediate start of sign manufacturing are given in three pages of information forwarded to top highway officials. AASHO is preparing complete specifications on these details including methods of testing sign colors and reflectance for various incidence and divergence angles.

AASHO held up release of the interstate marker for several weeks while attempting to get legal protection of the official design by patent, copyright, trade mark or service mark registration. The Commerce Dept. ruled that the new shield could not be copyrighted, but it is seeing to it that the marker cannot be registered in the name of any private person or commercial interest.

For easy identification of routes, AASHO members declared as part of their interstate marking policy that no more than two digits be used in the interstate route numbering system. Their system adheres to this principle and, in addition, avoids confusion with the existing U. S. route numbering system in two ways.

First of all, as part of AASHO policy, no interstate route within a state bears the same number as a designated U. S. route inside the same state. Second, the progressive numbering of interstate routes runs opposite to the long-established progression for U. S. routes.

This reversal is important because AASHO members elected to use odd numbers for north-south routes and even numbers for east-west routes—the same distinction as is made for U. S. routes. But the interstate numbers for north-south routes start low on the West Coast and increase toward the East Coast, just the opposite of the U. S. route marking system. Similarly, AASHO numbering of interstate east-west routes puts the lowest numbers in the South and the highest near the Canadian border, reversing the progression of U. S. route numbers.

To allow breathing space for future growth AASHO numbers for present interstate routes leave room for numbering additional routes that Congress may add later without exceeding the two-digit 99 which AASHO policy sets as a ceiling for the system.

Question of Money

Road programs in the states may be set back

Special problems over money for state roads rate top billing in at least three states.

In Nebraska, $52 million in proposed improvements and extensions on the regular state highway system will have to be shelved if a 1957 law increasing the state gasoline tax is blocked by referendum petitions.

State engineer L. N. Ress said 173 improvement projects would be postponed. Their cost is estimated at $49.5 million. Plans for $2.5 million worth of additions to the state system also would be blocked. The entire $52 million program is scheduled for the 1957-61 period.

- **Special session rejected**—Gov. Raymond Gary of Oklahoma has refused to accede to demands for a special session of the legislature to raise taxes for road work.

The state will need about $30 million in the next four years to pay its share of the cost of relocating highways to be inundated by the Eufala, Keystone and Olagah Dams.

Because the highway department has no funds in this year's budget for the relocation work, any allocation of money for the relocation project would result in a delay in construction of other projects already programmed.

- **Big money issue**—Tennessee is faced with a test suit to determine constitutionality of a 1957 state law that required the state to reimburse public utilities for cost of relocating their facilities in connection with the interstate highway program.

A hefty amount of money is involved. The 1957 legislature authorized the state to issue up to $30 million in bonds over a two year period to match federal highway construction funds.

However, the State Highway Department has estimated that relocation of utility facilities in connection with the interstate net would total more than $15.3 million. This is more than half the amount the state is authorized to borrow for road purposes.

Stitch in Time

Caissons will nail down slipping California shore

Caissons, acting as nails, have been inserted in groups of two and three along a 2,500 ft frontage, approximately 100 yd behind the shore line on Palos Verdes Peninsula, near Los Angeles. Engineers believe that the 25 "nails" will stop the land slippage that has caused damage to more than 150 homes within a 225 acre area.

Slippage was first detected in August of 1956 and within a few weeks the land was moving at an average rate of ¾ in. per day (ENR Nov. 29, 1956, p. 7). A few months later it reached a peak of 1¼ in. a day.

The engineering firm of Macintosh & Macintosh, and the geological firm of Walker & Clute were retained by Palos Verdes Properties, a land development firm that has considerable investment in the affected area.

• Clay is culprit—It was discovered that the rock had been sliding over waxy bentonitic clay, on an inclined plane with a slope angle of about 6 deg. Over thousands of years, the ocean had eroded the toe of the slope, leaving only an inclined rather than the traditional saucer-shaped plane. (These findings confirmed a Department of Interior geological study of more than 10 years ago, which pointed out that the Palos Verdes area round Portuguese Bend was a potential landslide area.)

Prior to last year, there was no drastic land movement. Property owners in the area blame the movement on the weight of earth fill placed for an extension of Crenshaw Boulevard being built by Los Angeles County. And they have filed damage claims amounting to $10 million. However, county engineers deny that the weight of the fill is significant in relation to the total land mass involved.

Regardless of what triggered the movement, damage was done, ranging all the way from minor wall cracks to complete destruction. Some property owners have moved their homes out of the area.

• Pin it together—In an effort to stave off further damage, the engineers recommended that the slip plane be penetrated at the base with steel and concrete piles. The first two caissons, 4 ft in dia and 20 ft long, were installed in March; placed half below the slip plane and half above. Strain gages were spaced along the outer diameter of each caisson and within two days movement in the total landslide area was reduced by 15%.

But, as anticipated, the first caissons—subjected to million-ton forces—began to lose their effectiveness. Two more were sunk in April, and again the movement was reduced.

• Tide helps—Recording meters were placed along the rim of the slide to determine if they were dealing with an integrated mass and to measure the effectiveness of the piles. It was learned from the meters that the movement was related to the height of the tides. At high tide the movement would cease for as long as two or three hours, indicating that the land was in fairly delicate balance and that control of just a portion of land could control movement along the entire plane.

Six more caissons were sunk, bringing the total to 10. With these the average movement was reduced from 1¼ in. daily to ¾ in.

It was decided that 15 more caissons would remedy the condition. The county, although denying responsibility for the problem, agreed to pay for these declaring that it had to protect its own investment in roads and sewers.

Only two companines submitted bids: Palos Verdes Properties was awarded a $50,000 contract; the other bid was for $500,000.

The final 15 caissons were installed in August, bringing the total to 25. They range from 34 to 114 ft in depth. Most are at an effective range of 60 ft to bottom. Each 22 ton caisson is made up of 44 No. 11 reinforcing bars placed in concentric circles of 22 bars each. High early strength concrete was used. In the center of each caisson is a 6 in. dia pipe, left open for observation.

As an additional precaution, fill and rock from a nearby quarry are being placed at the shore line to the high tide level as a revetment.

Movement has slowed to an average of 3/10 in. daily, and this with only about six of the caissons reaching their effective peak.

It is estimated that the land will move another 6 or 8 in. before a complete halt will occur.

And earlier this month, the Los Angeles County Board of Supervisors deferred voting on proposals for a $2.2 million earthfill and revetment program in the Portuguese Bend district, object of which would be to halt future damage by the sliding mass of earth. The deferral is awaiting further studies by county engineers regarding the feasibility of such a program which, if recommended, would require the construction of a sewer system and a drainage system to prevent further lubrication of the slip plane.

Engineers and geologists will make further probes of the area and await more definite indications of how successful the caissons will be in slowing up the earth movement.

Caught in Net

Planners see conflict in road program with cities

Planners continue to view with alarm the rolling federal highway program.

Last week it was at a symposium in Hartford, Conn., sponsored by the Connecticut General Life Insurance Co.

- Today's planning ignores people, they said.
- The federal program is "recklessness," said Lewis Mumford, author on city planning.
- Present policy is discriminating against railroads and rapid transit, said architect Victor Gruen.
- The whole program could be a detriment rather than a benefit, they said, concerning themselves mostly with the welfare of the metropolitan region.

• Program's progress—Federal Highway Administrator Bertram D. Tallamy brought word to the symposium of how fast and how far the road program has gone. And he related the program to urban areas, particularly.

Of the total $28 billion to be used for the interstate system, "more than one-half will be spent in and around urban areas for the construction of some 6,700 miles of arterial highways, which, with other funds, will make about $16 billion available for urban area highway improvement," said Mr. Tallamy.

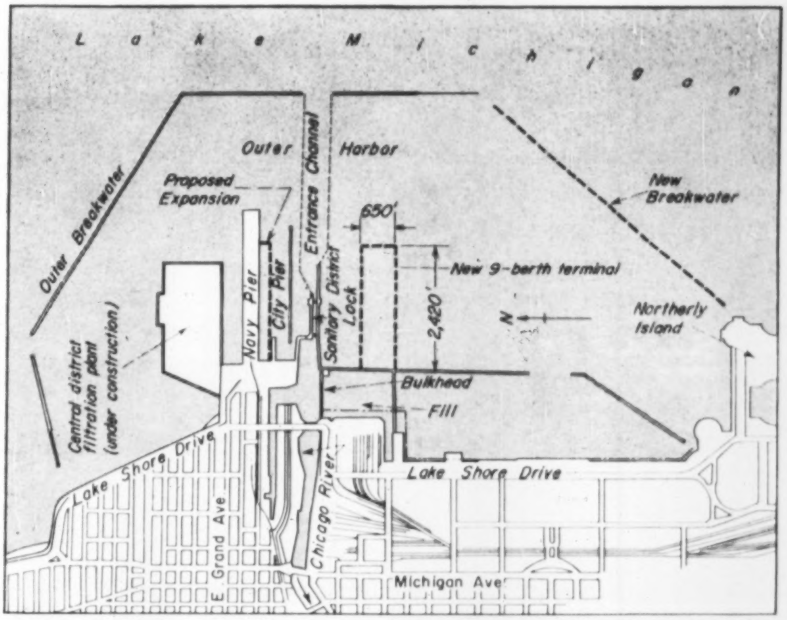
So far, "some 1,780 miles of interstate system have been placed under construction contract, involving a cost of some $775 million in federal aid," he reported. In addition, $552 million have been earmarked for design and purchase of right-of-way.

"Great care must be exercised," said Mr. Tallamy, "to make certain that urban areas will obtain the maximum amount of benefit from arterial highway construction."

Albert M. Cole, Administrator of the Housing and Home Finance Agency, stressed relationship of roads to urban renewal. Said Mr. Cole: "It is plain that the interstate highway system is going to expand our metropolitan boundaries far beyond the present patterns so that there will be clusters of suburbia beyond suburbia—and others beyond those. This evolution will bring with it new and expensive problems multiplying those we have now. If this super-suburbia is going to be a planless hit or miss scattering of homes, factories, stores and what have you, then eventually blight will lay like a pall over the landscape."

"We must avoid having a magnificent new transportation system disrupt urban activities. And we must not allow essential urban redevelopment to impede that transportation.

New terminal to be built on Lake Michigan is . . .



Chicago's Bid for the Seaway's Business

Carrying a price tag of $38 million, Chicago's newest and most ambitious answer to the cargo-handling challenge of the St. Lawrence Seaway is centered around Navy Pier.

As recommended in a report made public two weeks ago, the 33-year-old 3,000 ft long pier just north of the mouth of the Chicago River would be widened and modernized to provide four general cargo berths along its south side. Additional facilities would include a new nine-berth general cargo terminal just south of the river.

According to the 69 page report prepared by the New York consulting firm of Tippetts-Abbett-McCarthy-Stratton, improvements at Navy Pier will cost $8 million. The nine-berth terminal will cost $15.5 million and harbor improvements about $14.5 million.

About $14 million probably will be borne by the federal government.

• **Navy Pier expansion**—Development of general cargo facilities on Navy Pier will be restricted initially to the south side of the pier. The north side is occupied by the University of Illinois.

There are two plans. One would widen the pier 185 ft, demolish the existing two-story shed on the south side of the pier, and erect four 380x170 ft transit sheds behind a 55 ft apron.

Under the second plan the existing shed on the south side would be retained. The pier would be widened 100 ft and a new 54 ft wide transit shed would be built along the full 2,340 ft length of the existing shed, behind a 55 ft berm.

A combined rail and truck loading platform would be located at the rear of the existing shed. Two rail tracks would be installed along this platform, which would be adequate to handle at each berth 26 trucks and 12 rail cars simultaneously. Two rail tracks would also be installed on the south apron.

Under either of these plans, the south side of Navy Pier will furnish a modern four-berth general cargo terminal, having a combined operating capacity of 280,000 tons per year. Each berth will be 550 ft long.

• **Nine-berth terminal**—The proposed nine-berth general cargo terminal just south of the mouth of the Chicago River will have a combined annual capacity of 630,000 tons. It will be developed on a filled pier to be built 650 ft wide and extending 2,420 ft out into Lake Michigan.

Vessel access will be provided by dredging slips along both sides and at the end of the pier. They will be connected to the present Chicago harbor channel. Initially the slips and connecting channel will be dredged to a depth of 27 ft; and to a 30 ft depth when needed at some future date.

A new outer harbor breakwater will be needed to protect vessels berthed on the south side of the pier.

• **Transit sheds**—Four 380x170 ft single story transit sheds will be built along each side of the 2,420 ft long pier, behind a 55 ft berm. Each shed, with its 64,000 sq ft of covered area, will serve one berth.

Each berth will have 26 truck loading positions located at the sides of the sheds. Trucks parked at these loading positions will not interfere with rail switching movements. There will also be a 40 ft wide access road extending along the center line of the pier.

At the rear of each transit shed there will be 16 rail car positions on two tracks for loading and unloading cars. Two rail tracks will also be installed on each apron.

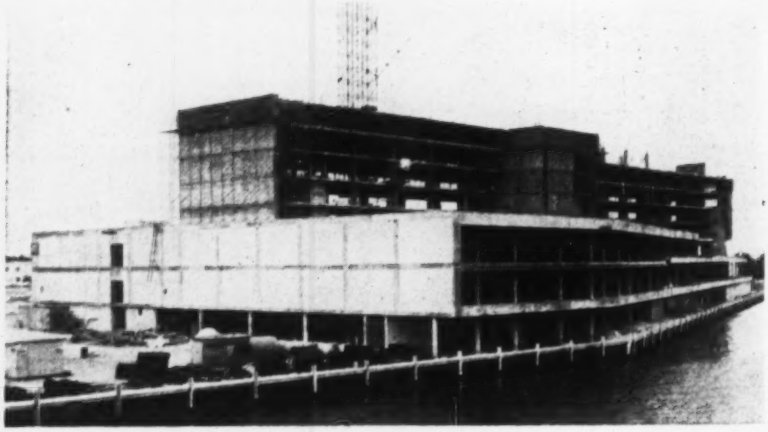
At the outshore end of the pier, there will be a single open general cargo wharf. It will furnish storage space for structural steel, pipe, large machinery and other commodities not requiring coverage storage space.

The transit sheds on the widened portion of Navy Pier and on the new 2,420 ft pier south of the Chicago River should be conventional steel frame structures, of either riveted or welded construction, as recommended by the report. Exterior walls should be protected metal siding; with the lower 4 ft being concrete to reduce damage by cargo handling equipment.

• **Stage development**—The first improvements should be made to Navy Pier, with the first two berths available for overseas shipping by 1960. The other two should be ready by 1965.

Considerable time will be needed to get the nine-berth terminal under construction. For one thing, Congressional authorization must be secured as well as federal appropriations for extending the Chicago breakwater to protect the new terminal area south of the river.

Under construction on a bayfront site in Miami, Fla., the new DuPont Plaza Center is a multi-purpose structure



Miami Building Will Be Three in One

When the $11 million DuPont Plaza Center opens in downtown Miami, Fla., next December it will combine the operations of three buildings in one structure. Of the 432,000 sq ft of floor space provided in the 12 story building, 100,000 sq ft will be taken up as an exhibition hall, 70,000 sq ft will be used as office space and the rest will be devoted to a luxury type hotel.

The DuPont Plaza Center will, under one roof, give national manufacturers exhibit space in the Architects International Bureau of Building Products, office facilities and hotel accommodations in the 256-room DuPont Tarleton Hotel.

Located at the mouth of the Miami River and bounded on one side by the river and by Biscayne Bay on another, the center has lower floors that are roughly triangular in shape. At the fourth floor, the building reduces to a 402 x 52 ft rectangular tower, which rises another nine stories.

To avoid dewatering problems in a deep foundation excavation, the easterly 125 ft of the building is supported on precast concrete piles driven to rock. The rock slopes up from about 14 ft below grade in the east section of the site to about 4 ft at the west end; so spread footings were used to carry the loads under the west end.

The building is of reinforced concrete flat plate construction. Column spacing is 26 x 25 ft. Floors are two-way waffle slabs, 12 in. deep and weighing 84 psf.

To meet hotel lobby space requirements, two of the 12 story columns were interrupted at the fourth floor. Two plate girders spanning 44 ft were installed to carry the loads for these columns to adjoining column lines.

The girders, limited to a depth of 4 ft, have flanges composed of single plates 6 in. thick throughout. The flanges taper in width from 26 in. at the center to 4 in. at each end.

An expansion joint, separating the tower section into two sections each 201 ft long, necessitated the use of shear walls at both ends of each section. The concrete shear walls were designed to resist hurricane forces of 45 psf acting against the entire projected area of the building.

Air conditioning and electrical equipment are located on the ground floor. Since this level would be below tides expected in hurricanes, the equipment is enclosed in watertight construction, including bulkhead doors. The remainder of the ground floor is a 4 in. slab on compacted fill.

Three 450 ton centrifugal compressors provide refrigeration for the air-conditioning system. Wells drilled on the site deliver water 4F colder than water from the river.

Electrical distribution throughout the building is at 480 v. There are 277 v fixtures in the office section. Dry type transformers scattered throughout the structure reduce the voltage to 110 v where required.

The hotel and office sections share the tower portion of the center, while the exhibition hall is on two floors in the westerly portion of the triangular base.

The resort style hotel will have a swimming pool and sun deck on the river side of the building and a boat dock extending the complete length of the structure.

If there is sufficient demand for additional hotel accommodations, the offices in the western part of the tower will be converted into hotel rooms. If the hotel takes over the complete tower section land is available on the western end of the site for a separate building to provide the office space needed.

Architects were Petersen & Shuflin. H. J. Ross & Associates were structural engineers. Both are from Miami. Arkin Construction Co., Miami Beach, is general contractor.

MODEL SHOWS LOCATION of (A) the two story exhibition area, (B) section devoted to offices and (C) hotel section. Office area can be converted to hotel rooms if needed.

TVA Computer

Power agency to employ king-size electronic unit for hourly generation plan

The Tennessee Valley Authority has announced that by next June it will have in operation a giant electronic computer on which it will pay $50,000 a month rent. The computer is IBM's Model 704 which sells for more than a million dollars.

Although TVA is a little late getting on the electronic computer bandwagon, it has now jumped on in a big way. For as far as is known, no other engineering or construction agency has ordered a computer of this size. It dwarfs the medium-sized computers so many construction industry agencies are now using.

The TVA computer's big chore will be to calculate in a couple of minutes at the beginning of each hour the distribution of electric power loads to be met by the scores of generating units—both hydro and thermal—in the TVA system. The machine will have to consider reservoir levels and current river and weather conditions in addition to differences in fuel costs at thermal plants, variation in generating efficiencies and transmission losses to load centers.

• Payrolls, of course—In addition, the new machine will make more extensive and much faster analyses of long-term weather probabilities and their effect on generating capacity of the TVA system. For about six hours each week, the computer will also prepare the payroll for 15,000 TVA employees.

The 704's capabilities are difficult to comprehend. It can add or subtract ten digit numbers at the rate of 42,000 a second, multiply or divide them at 5,000 per second. Its memory can accommodate 16,000 ten digit numbers.

In calculating the best possible power system generating schemes each hour, the computer will proceed much as an engineer with a desk calculator would if time were available to him. Various combinations of more or less generation at each plant will be tried by the computer to put on the line the combination resulting in smallest total cost.

The Tennessee Valley Authority, in describing the computer to be used, claims for comparison's sake that it is expected to solve problems in one hour that it would take 30 years to accomplish on a desk calculator.

The computer will be located at Chattanooga, where power system engineering is handled by TVA. The design and construction departments of the agency are in Knoxville at TVA headquarters.

CONTRACTORS
OF AMERICA
SKILL
RESPONSIBILITY
INTEGRITY

PRESIDENT Lester Rogers (right) congratulates nominee Fred Heldenfels as . . .

AGC Holds Its Midyear Meeting

Election of Fred W. Heldenfels, Jr., as the next president of the Associated General Contractors of America was assured last week in Seattle, Wash., when his nomination was unopposed at the midyear meeting of the AGC's governing and advisory boards. Voting will be by mail ballot during the winter, with installation at the 39th Annual Convention next February in Dallas, Tex.

Mr. Heldenfels has been serving for the past year as vice president. The nomination for the vice presidency next year went to James W. Cawdry of Seattle. Mr. Cawdry has been president of Cawdry & Vemo since 1950. He has served as president of the Seattle chapter and is completing his third term as a director of the national organization. His nomination marks the first time that a contractor from the state of Washington has been selected for the vice-presidency, usually a stepping stone to the presidency.

In business meetings marked principally by interest in a report of the labor committee (see p. 153) the AGC's 500 delegates at the Seattle session concerned themselves also with legislative matters.

The legislative committee recommended opposition to a proposed Congressional bill which would change the method of awarding negotiated contracts, transferring this authority from the hands of the President to Congress. It also opposed a bill which would require that contractors secure bonds for the purpose of protecting the states in which they are working from loss arising from unpaid state taxes and other charges, terming the matter a "state responsibility."

John E. Healy, II, chairman of the education committee, revealed that an educational film, designed to inform junior and senior high school students about careers in the construction industry, will be ready for distribution in about 60 days.

Robert M. Hoover of Kansas City, Mo., chairman of the heavy construction and railroad contractors' division, reported the outlook for heavy construction to be "very favorable" and predicted that investment this year would equal or slightly exceed 1956 levels. This division recommended that "limitations by the executive branch of the federal government upon the expenditure of funds made available by the legislative branch be minimized to avoid inequities to the contractor and higher ultimate cost to the government." It proposed "that contracting agencies be permitted to transfer funds available but not earned on one project to other projects whereon earnings have exceeded allocations" and that "provisions be incorporated in contracts for construction work relating the desired rate of progress to the availability of funds."

James M. Sprouse, manager of the highway division, predicted that the volume of construction awards under the federal-aid highway program would increase by at least 30% during the coming year but warned that, "if costs of building the 41,000 mi interstate system continue to increase, the pay-as-you-go method under the current financing program will force a considerable stretch-out of the entire program."

AASHO Test Road Contract Let

New bid is $932,000 below that rejected just last year but delay has taken its toll of apparent cost cutting

A $5.7 million contract for paving of the American Association of State Highway Officials test road at Ottawa, Ill., has been awarded to S. J. Groves & Sons Co., Minneapolis. The award was made by the Illinois Division of Highways, acting as agents for the sponsors who include the Federal Bureau of Public Roads and the National Advisory Committee that represents the Highway Research Board.

A bid of $6.6 million, submitted by the same company earlier in the year (ENR June 13, p. 23), was rejected by the highway division with the concurrence of the Bureau of Public Roads. The bid at that time exceeded the funds available.

But much of the apparent $932,000 saving—between the earlier bid and this recent one—will be consumed by added costs of $442,000 for processing sand and gravel to go under the paved surface and $250,000 in overhead caused by the one year delay.

The contract calls for 7.8 miles of 24 ft wide bituminous concrete pavement and 7.8 miles of 24 ft wide portland cement concrete pavement. The road, already under construction, is expected to be ready for test operations in the fall of next year.

With a present price tag of $22.7 million—$19 million more than contemplated four years ago—the test road has settled down to a firm schedule.

Here is the way the working program will go, in the opinion of the Highway Research Board and its advisory committee for the test project:

- Paving will be completed by the end of July, 1958.
- Test traffic will start about Sept. 1 of next year and will complete the planned 1.2 million load applications in two years, finishing up before the end of August, 1960.
- Data analysis will be completed by Dec. 31, 1960, and a final report with conclusions should be ready by late fall of 1961.

This final report will be much too late to give conclusive support to recommendations that the Bureau of Public Roads must make to Congress on March 1, 1959, respecting maximum desirable weights and dimensions of vehicles. The Highway Act of 1956 limited weights for the interstate system to 18,000 lb under a single axle and 32,000 lb under tandem axles except where state laws permitted greater loads on July 1, 1956.

Congress called for the 1959 report from BPR to assist it in considering any modification of the weight and size limits. The bureau will make such a report and will be able to give the legislators some facts to guide their deliberations.

These findings will be available because of the superior high-speed instrumentation and data processing equipment on the test project near La Salle, Ill. Much better and faster than equipment previously used for the WASHO road test in Idaho and the initial test project in Maryland, new electronic recording and computing devices will provide useful interim data not only for BPR and Congress, but also for design engineers throughout the country.

Detroit Port Commission Approves $13 Million Plan

Plans for construction of a $13 million Seaway port at Detroit have been approved by the Port of Detroit Commission and forwarded to the Wayne County Board of Supervisors.

The proposal calls for acquisition of 1,977 ft of river frontage.

Three warehouses, each 362 x 162 ft, including loading platforms and two gantry cranes, would be located on the 36 acre site.

It is estimated that the harbor facilities could handle four 7,000 to 10,000 ton ships at one time.

The request for a total of $13.5 million was sent to the ways and means committee of the Board of Supervisors, with a recommendation that it be put on the ballot for decision by the voters Nov. 5.

If approved by the committee and a special port study committee of supervisors, the measure must then be endorsed by the full board. If the project is approved by voters, bids will be open within the following two or three months.

Of the total cost, $9.7 million would go for construction purposes and $2.5 million would be spent for acquisition of property.

Ontario Hydro to Build Largest Steam Plants

The Ontario Hydro-Electric Power Commission has announced plans to build two thermal power stations in the western Toronto suburban area at sites not yet finalized. Each of these two plants—to house 1.8 million kw of potential—will be larger than any other thermal plant in the world. (TVA's biggest steam power plant is the 1.6 million kw Kingston plant near Knoxville.)

Total cost is estimated at $500 million for the two plants, one of which is to be ready by 1961 and the other by 1968. Bids for the first two generating units, each with a capacity of 300,000 kw, have been invited. There will be six such units in each plant.

Possible sites for the two generating plants are at Long Branch and Burlington, and the Ontario Hydro Commission is negotiating with government agencies having land in those areas. Each plant will require 1.2 million gal of water a minute when operating at full capacity, and will use between 4 and 5 million tons of coal a year.

In announcing plans for the projects, Ontario Hydro chairman James S. Duncan stated that southern Ontario needs more electric power and a decision had to be made between conventional steam generating plants or nuclear power plants. Since the latter are still in the future, the immediate need of arranging for more electric power required plans for steam generating units was inescapable.

Four Societies Organize Modular Standards Group

An association for promoting adoption of modular standards in the building industry has been incorporated under the name Modular Building Standards Association.

Sponsors are the American Institute of Architects, Associated General Contractors of America, National Association of Home Builders, and Producers' Council, Inc.

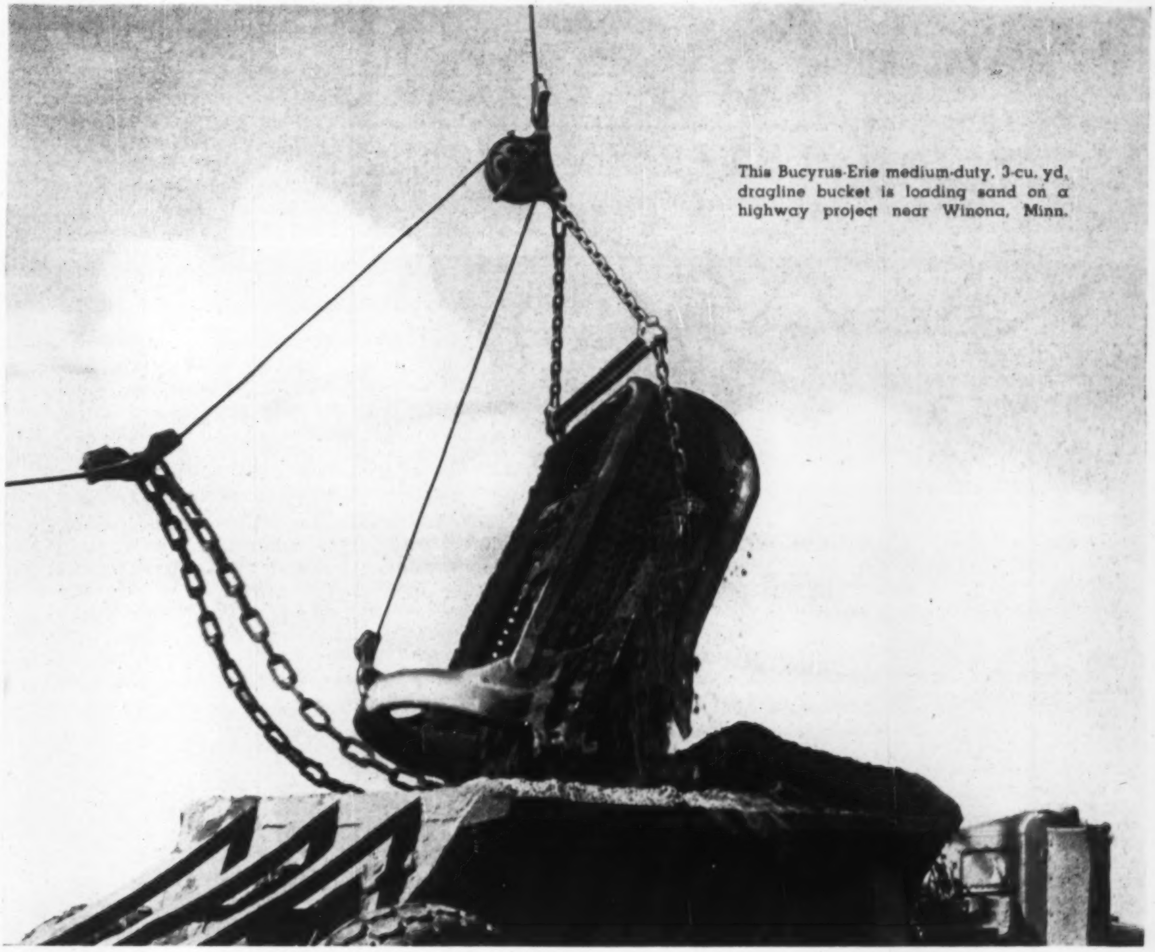
Elected president of the organization is C. E. Silling, of Charleston, W. Va., architect and chairman of the American Standards Association's committee on dimensional coordination of building materials and equipment. He said the objectives of the new association "are to promote the acceptance and application of the principles of modular dimensioning standards as applied to the field of planning for construction, and the dimensioning of the materials, appliances and items of equipment employed in construction and related activities."

Eligibility for membership in the society is open to any person, association or company which is in sympathy with those objectives.

The headquarters of the MBSA are at 2029 K. St., N. W., Washington 6, D. C.

Other officers besides Mr. Silling are: first vice president, James E. Coombs, Morgantown, W. Va.; second vice president, H. Dorn Stewart, Lancaster, Pa.; and treasurer, Martin L. Bartling, Jr., Knoxville, Tenn.

A New Bucyrus-Erie Bucket Will Help Keep Hauling Units *On the Go!*



This Bucyrus-Erie medium-duty, 3-cu. yd. dragline bucket is loading sand on a highway project near Winona, Minn.

Loads 'em Fast A new-design Bucyrus-Erie dragline bucket has accurate balance to dig in quickly, tapered basket to fill rapidly. Proper flare and balance reduce bobbing and spilling. High arch and smooth inside design help the bucket dump clean and fast — to keep haul units *on the go.*

Keeps 'em Rolling Bucyrus-Erie buckets are made of BECOLOY, which is not only light to cut down weight of buckets, but extra tough to keep them working. BECOLOY has a fibrous structure which assures excellent impact and shock resistance. Field maintenance is simplified. BECOLOY can be cut with an acetylene torch and welded without special procedures.

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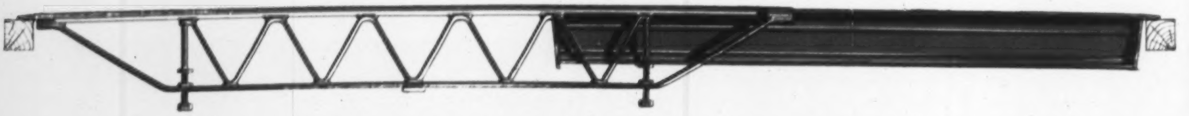

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Right to Sell

Surplus utility sales are involved in Ohio fight

Eleven Ohio cities in a joint action to retain the right to sell surplus public utilities, such as water and sewer service, outside their city limits and on their own terms, recently were successful in obtaining a temporary restraining order to prevent the Ohio secretary of state from taking any further steps to put a proposed constitutional amendment before Ohio voters in November.

The amendment would restrict Ohio cities in their right to sell surplus utilities, by authorizing the state legislature to fix charges and to determine amounts that could be sold outside the municipality limits. At present, Ohio cities have the authority, under "home rule" provisions of the constitution, to make their own contracts for sale of utilities outside corporate limits as long as the amount sold does not exceed 50% of the rate charged within the city.

The temporary injunction was obtained on the plea of contradictory wording in the amendment and lack of quorum in the legislature when the resolution for the amendment was passed.

The amendment was triggered by the cities themselves when their attempt to get the standing 50% restriction lifted last spring produced instead a resolution for the amendment. The cities involved in the fight are Akron, Dayton, Columbus, Youngstown, Cleveland, Cincinnati, Delaware, Toledo, Galion, Indian Hill and Libson.

Pennsylvania Plans Limited Access Road Across State

The Pennsylvania Department of Highways will complete a location and cost estimate study for construction of a limited access highway from the West Virginia state line to the Great Lakes port of Erie.

The proposed route is to parallel U. S. Route 19 and, in choosing the location for the new expressway, provisions will be made for incorporating presently planned or approved limited access portions of Route 19.

Gov. George M. Leader commented that the new route will give western Pennsylvania and parts of West Virginia badly needed access to a lake port that can ship goods to, and receive goods from, United States and Canadian ports via the St. Lawrence Waterway.

"As a link between several states as well as domestic and foreign centers of commerce, the route has the characteristics of an interstate highway. I strongly feel it should become part of the Interstate System," said Governor Leader.

One of the important materials moving through the port of Erie is iron ore from the Lake Superior region. When the Labrador fields open, the steel industry of western Pennsylvania will be able to receive these high grade ores. Erie is also an important coal shipping port and with the use of larger ships on the Great Lakes, it is predicted that there will be increased demand for western Pennsylvania coal, both in Canada and abroad.

Public Health Association To Work at Grass Roots

The American Public Health Association has announced an action program aimed at helping communities cope with changing health problems. It will take the form of expert committees in eight areas who will consult with local health agencies, write operating manuals, conduct field studies and demonstrations and write policy statements.

According to Dr. Reginald M. Atwater, executive secretary, APHA desires to provide leadership to governmental and voluntary agencies facing health problems of the nuclear age. In some important areas of public health, methods and standards have remained virtually unchanged since the horse and buggy era, said Dr. Atwater.

Among the technical committees and their chairmen are: Radiological Health, Dr. Daniel Bergsma, New Jersey State Commissioner of Health; Environmental Health, Dwight F. Metzler, chief engineer of the Kansas State Board of Health; and Public Health Administration, Prof. Vlado A. Getting of the University of Michigan School of Public Health. Blucher A. Poole, Indiana state sanitary engineer, is a member of APHA's coordinating board for the program.

With its new program, APHA becomes one of the leaders among professional societies who look to an ever widening sphere of influence for themselves and their members.

October Bids Are Called On Hetch Hetchy Tunnels

The San Francisco Public Utilities Commission has called for bids Oct. 3 on two tunnels expected to amount to about $9.3 million.

The tunnels are part of the Hetch Hetchy system, San Francisco's municipal water and power development in Yosemite National Park, 200 miles east of the city.

Contractors must submit a single bid for the two tunnels, which are to be completed in 930 calendar days. One tunnel, connecting Cherry Dam with penstocks leading to Cherry powerhouse, will be a 12 ft horseshoe 29,200 ft long. The other, which will divert runoff from the Lake Eleanor watershed into existing Cherry Reservoir, will be 5,850 ft long. Major portions of both tunnels will be dug through granite and will be unlined.

The work was scheduled with the aim of getting the 135,000 kw Cherry powerplant in operation by July, 1960. A 1955 bond issue of $54 million will finance the work.

Lawler Quits Highway Job To Head Pennsylvania Pike

Joseph J. Lawler, Pennsylvania's highway secretary since 1955, is resigning Oct. 1 to become a member of the state's turnpike commission. At the same time Dr. Merritt A. Williamson is scheduled to leave his post as vice chairman of the commission.

Mr. Lawler will succeed James F. Torrance, whose term expired June 4.

Gov. George M. Leader said he has not yet found a successor for the highway post, which under recent pay revisions is now a $20,000 a year job. He is willing to pay up to $25,000 a year for a "top flight" engineer. The governor said Mr. Lawler has been working at an "exhaustive pace" and felt that the highway program now had progressed far enough to permit him to take a less strenuous post on the turnpike commission.

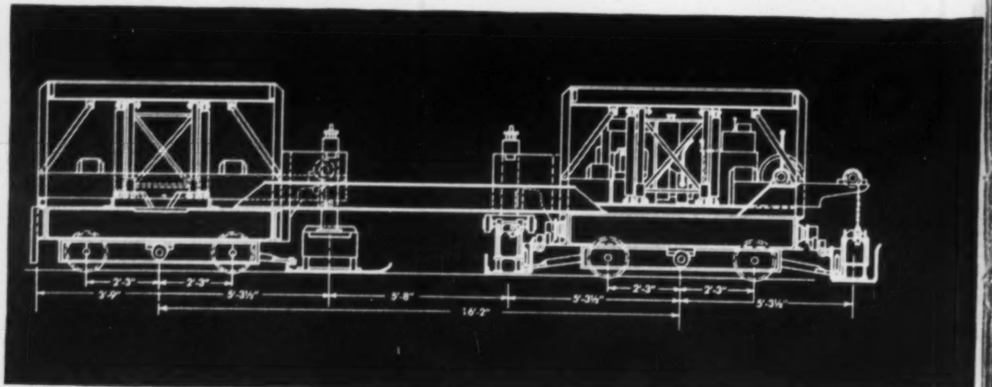
Mr. Williamson, dean of engineering at Pennsylvania State University, although confirmed by the state senate for a 10 year term, agreed to become a commissioner on a temporary basis only to tide the tollroad agency through the "scandal" investigation period.

Briefs

• **Hawaiian convention hall**—Construction has started on the second convention hall to be built in the last year in Honolulu's burgeoning Waikiki Beach area. The hall, 180 x 56 ft and seating 1,000 persons, will be located on the grounds of the Princess Kaiulani Hotel. Owned by the Matson Navigation Co., the hall is expected to be completed by early 1958. Hawaiian Dredging & Construction Co., Ltd., Honolulu, is general contractor. Vladimir Ossipoff, Honolulu, is architect.

• **Building officials meet**—The Building Officials Conference of America will hold its first regional conference this year in cooperation with the Missouri Association of Building Officials and Inspectors. The annual public hearing for proposed changes in the basic and abridged building codes, issued by the BOCA, will be a feature of the conference, which is scheduled to be held in St. Louis, Oct. 31 to Nov. 2.

Two Detroit Special finishing machine frames engineered into one rugged unit combining finisher and float operation. Equipped with quick crown change screeds. Supplied in either 12' to 18' or 20' to 25' working widths. Hydraulically controlled pneumatic tired transportation assemblies optional.



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First Again
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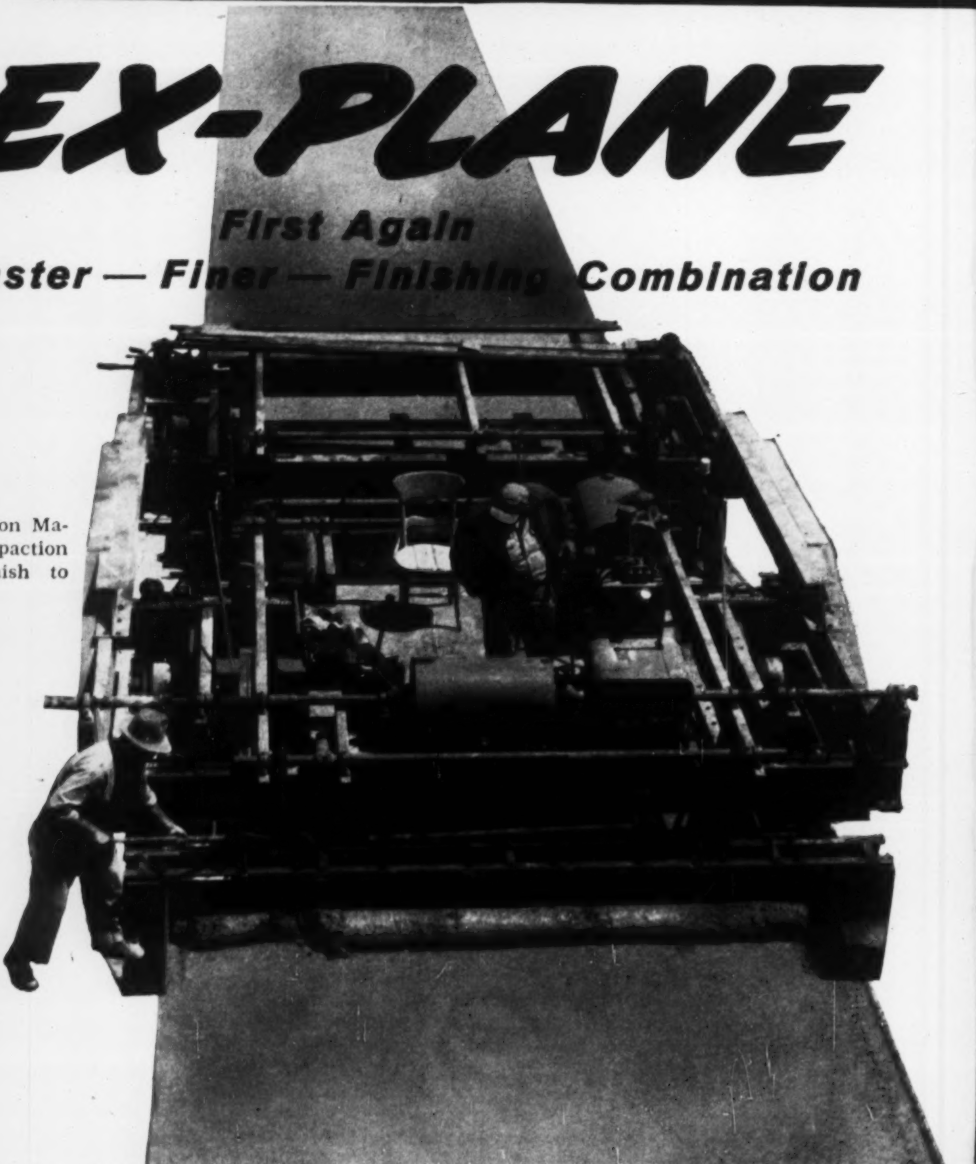

"FLEX-PLANE" Combination Machine gives greater compaction and applies superior finish to Connecticut Turnpike.

The Heltzel Steel Form and Iron Company · Warren, Ohio

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WORLD'S LARGEST BUILDER OF CONCRETE FINISHING EQUIPMENT

U. S. ROUTE 16—near Farmington, Michigan. Loselle Construction's Combination increases daily finishing average.

". . . 4400 feet of 22-foot pavement finished in one day." . . . "keeps up with three dual drum pavers." . . . "450 lineal feet of 24′ pavement per hour." These are typical reports from contractors using the revolutionary new Flex-Plane Combination Finisher-Float Machine which does the combined jobs of transverse and longitudinal finishers. On the average, users finish over 3000 feet of pavement a day, requiring only two or three hand finishers depending on type of joints being used.

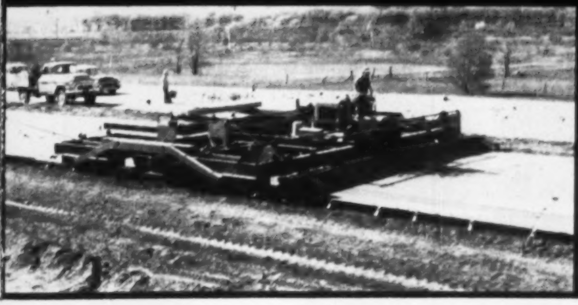
On-the-job checks show longitudinal surface smoothness to be unsurpassed by any other equipment regardless of condition of forms. Results prove it to be the fastest, most efficient finishing machine in use today.

But why not get all the facts? Write today for your copy of the data-packed "Flex-Plane Finisher-Float Machine" brochure. See for yourself why contractors consider it the finest machine of its type in the world.

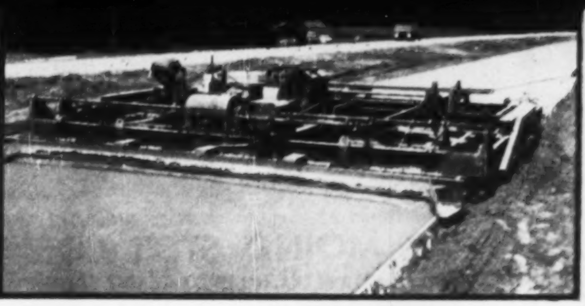
368

U. S. ROUTE 30 — J. A. Jones Construction Company uses combination on straightaway paving — Flexplane self-widener on interchanges near Mansfield, Ohio.

CONNECTICUT TURNPIKE—DeLillo Construction Company's Combination cuts hand finishing to a minimum.



U. S. ROUTE 12—Kalamazoo, Mich., bypass is worked by Carl Goodwin & Sons. Contractors generally report substantial savings over previous finishing methods.



U. S. ROUTE 23—Combination Machine owned by Denton Construction Company keeps up with three dual drum pavers south of Brighton, Michigan.

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Samuel S. Baxter is overseer of a $52 million rebuilding of a twice-great water system. Conversion of Queen Lane Waterworks (right) into a modern facility is symbolic of a . . .

Golden Decade for Philadelphia Water

Philadelphia is a particularly appropriate host city for next week's annual convention of the American Public Works Association. For in three big areas of municipal public works—sewage disposal, refuse disposal and water supply—the City of Brotherly Love is once again in a "golden era" after many years of torpor and desultory action.

By 1960 all of the city's sewage will be treated before being discharged into those two historically famous rivers, the Delaware and the Schuylkill. Under a ten-year, $80 million anti-pollution program, three treatment plants with a total capacity of 400 mgd and numerous interceptors have been constructed (ENR Mar. 8, 1956, p. 37). A few more miles of interceptors to complete the program are scheduled to be in operation by 1960.

Since 1952 when it had only 600 tons per day of incinerator capacity, Philadelphia has spent $10 million to add 1,350 tons daily capacity in four new or expanded plants in its attack on open burning. Another 2,400 tons worth of incinerators is scheduled for completion by 1964, when capacity will have caught up with refuse collection (ENR July 18, p. 56).

But the city's brightest accomplishment, nostalgically, if for no other reason, is its current ten-year, $52 million reconstruction program, coupled with a revitalization of the Philadelphia Water Department. When completed in 1960, 400 mgd of slow sand filter capacity will have been replaced by 487 mgd of modern rapid sand filtration plants, capable of 730 mgd at continuous overload, and Philadelphia can again take its place among the first rank of water suppliers.

• **Fall from pedestal**—The city's water history is one of extremes. In 1801, Philadelphia became the first city in the then infant nation to be served by a central water plant—the Centre Square Works, which was replaced in 1815 by the old Fairmount Works on the Schuylkill River. Subject to much criticism at the time, Fairmount was built to much greater capacity than existing demand while contemporary cities like New York, Boston and Baltimore were trying to undertake waterworks that would be inadequate even before they were completed.

Philadelphia maintained its early advantage by enlarging Fairmount and subsequent works ahead of demand until the 1870's. During this period Philadelphia's action served as a shining example to the rest of the nation. But apparently the local citizenry took things for granted, for the waterworks was allowed to deteriorate badly during the next 30 years.

The period from 1900 to 1913 was a second golden era in Philadelphia's water history. Four large slow sand filtration plants, with chlorination facilities, were constructed and again the city was found to be in the vanguard of water suppliers.

But this state of affairs did not last very long as fate played an unkind trick. Just as the last slow sand plant was being constructed, the water supply industry turned to rapid sand filtration. The grand system of the early 1900's became old before its time and Philadelphia's water fortunes remained at low ebb until the beginning of the present decade.

• **Big decision**—Basic to Philadelphia's current filter reconstruction program was a decision to continue drawing on Schuylkill and Delaware River in Philadelphia rather than obtain purer upland water (from the upper Delaware River). For a long time both rivers had been receiving large amounts of pollution load, but in recent years Pennsylvania's clean streams program and the Interstate Commission on the Delaware River have reduced pollution considerably. One of the key objectives of Philadelphia's own cleanup program was to protect the Torresdale intake from the discharge of the city's Northeast sewage system.

Anti-pollution measures notwithstanding, coliform organisms for the year 1956 averaged monthly 34,000 as most probable number (MPN) per 100 milliliters at the Queen Lane plant on the Schuylkill and 86,000 MPN per 100 ml at Torresdale on the Delaware. However, even these high counts could be handled by the existing slow sand filtration plants.

The key role in shaping the decision to remain with present water sources was played by Samuel S. Baxter, first as assistant chief engineer and chief engineer of the old Department of Pub-

HOW TO HANDLE
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Contractor: O. R. Burden Const. Co.

WELLPOINT PUMPS HANDLE
22 FT SUCTION LIFT

LOWERING 16 ft of water at this lift would ordinarily mean placing wellpoint system on a berm below ground. Actually, as photo shows, results were achieved in the simplest way, without additional excavation, the wellpoint line and pumps working from street level. Other noteworthy items revealed by the photo include: (a) pre-drainage with wellpoints on only one side of wide trench; (b) the open-cut method, eliminating costly sheeting.

• The foregoing are typical of the efficiencies of the Griffin Wellpoint systems (several used continuously) on this vast project which involved mile on mile of digging, with the majority of the pipelines laid far below ground water table in deep trenches containing water-bearing sands. Progress rate? Even in many of the swampland sections, it topped 500 ft per day. For "quick-dry" . . . specify . . . Griffin.

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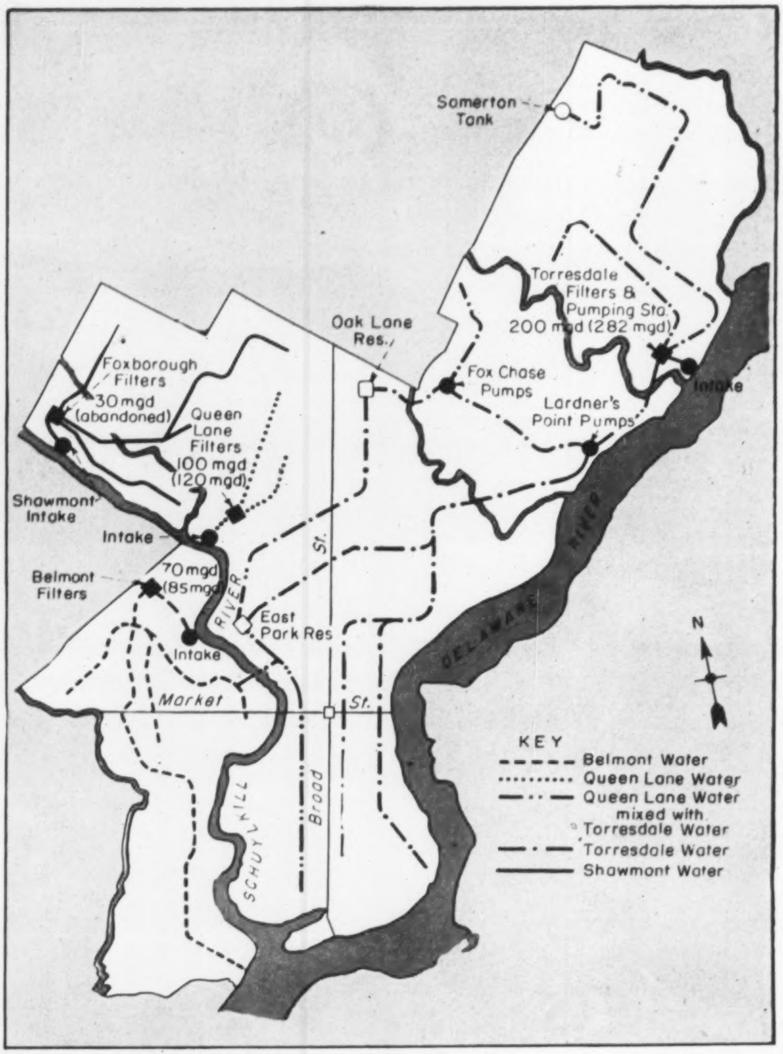


Somerton Tank
Torresdale Filters & Pumping Sta. 200 mgd (282 mgd)
Intake
Oak Lane Res.
Fox Chase Pumps
Lardner's Point Pumps
Foxborough Filters 30 mgd (abandoned)
Queen Lane Filters 100 mgd (120 mgd)
Shawmont Intake
Intake
Belmont Filters
70 mgd (85 mgd)
East Park Res
Intake
Market St.
Broad St.
SCHUYLKILL RIVER
DELAWARE RIVER
N
KEY
Belmont Water
Queen Lane Water
Queen Lane Water mixed with Torresdale Water
Torresdale Water
Shawmont Water

CONSTRUCTION PROGRAM involves building modern waterworks at existing sites, reconstruction of many mains and pump stations. Numbers in parenthesis are capacities of new treatment plants.

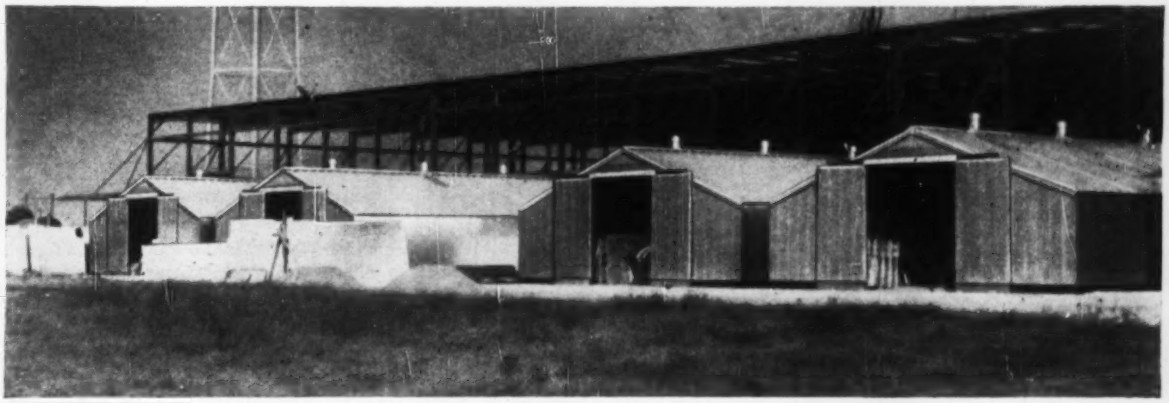
lic Works between 1946 and 1952 and now as Commissioner and Chief Engineer of the new Water Department (see p. 42). Commissioner Baxter reasoned that since the clean streams program had been effective in reducing pollution loads in the Schuylkill and Delaware, the rivers would in all probability further improve in quality or at least hold their own. In addition, technological advances in water treatment would improve the existing ability of treatment works to cope with river pollution.

Although economy was the major factor in the decision to stick with downriver sources, Sam Baxter's stand on the effectiveness of stream pollution control and water treatment plants in safeguarding water quality represents a courageous, sometimes lonely, position in this day and age.

• Reconstruction program—Outmoded, badly deteriorated and undersized plants dictated the current program. At the heart of it are three new filter plants at the Torresdale, Queen Lane and Belmont sites (the Roxborough filters will be abandoned). In addition, a very vital $16.2 million is being spent on raw and finished water pump stations, mains to the Roxborough service district and throughout the city, and on telemetering equipment for 70 points of the entire system to bring the total cost of the program to $52 million.

The existing filter plants provide various combinations of facilities for pre-settling, coagulation, pre-filtering,

How a Contractor and a Manufacturer Saved Money with an Armco Steel Building



Four Armco Steel Utility Buildings, in foreground, provide shelter for textile machinery while the new Carlisle Finishing Company plant is being completed. Later, they were dismantled and moved to other cities for re-erection on permanent sites.

Consulting Engineer:
J. E. Sirrine Company,
Greenville, South Carolina

When Carlisle Finishing Company, Carlisle, South Carolina, drew up plans for a new plant, the company and the building contractor made a novel agreement that saved money for both of them!

The contractor, Daniel Construction Company, Inc., of Greenville, South Carolina, put up an economical 70- x 140-foot Armco Steel Building for their use during construction of the main plant. After construction work was completed, the Armco Building was turned over to Carlisle, a division of Cone Mills Corporation, textile manufacturers of Greensboro, North Carolina. Now it's a permanent warehouse.

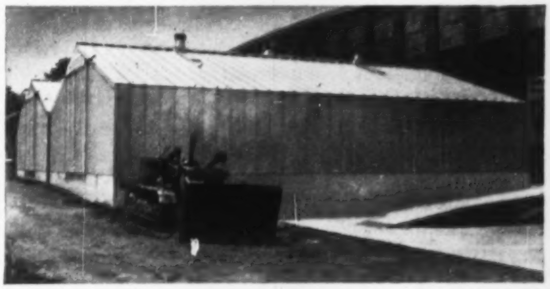
On the same project, company officials had the problem of storing textile machinery arriving before the plant was completed. As a solution, they erected four Armco Utility Buildings, each 36 by 48 feet, adjacent to the site for this purpose. After the new plant was completed, two of the buildings were dismantled, moved about 150 miles to Greensboro, North Carolina, and re-erected at the owner's White Oak Plant. The other two buildings were also dismantled and sent to the Greenville, South Carolina, plant to be used for storage.

In each case, an Armco Building provided shelter at the construction site and was later used as a permanent structure for another purpose.

* * *

Armco Buildings, with their all-bolted construction that simplifies erection or re-erection, are one of the more than 30 Armco Drainage and Construction Products for industrial, municipal, highway and railway applications. Write for data or *call Western Union and ask for Operator 25.* Armco Drainage & Metal Products, Inc., 5667 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

This Armco Steel Building was purchased by the Carlisle Finishing Company to serve as shop, office and equipment storage for the contractor. According to plan, it was later used as a warehouse by the owner.



These Armco Utility Buildings are shown here after being dismantled, moved 150 miles, and re-erected at another of the owner's plants.

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"Everything But the Squeal" From a Single Source
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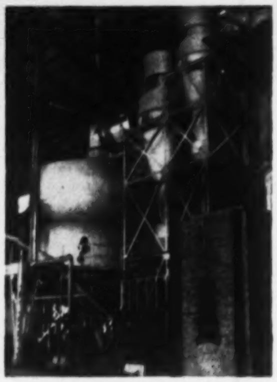
Dowa Mining's Kosaka hydro-metallurgical plant where Dorrco FluoSolids System roasts 83 metric tons of complex copper-zinc concentrates per day.



One of two 20 ft. dia. FluoSolids Reactors roasting 235 metric tons per day of crushed pyrrhotite ore at Dowa's Okayama Plant.

Fluidization—
key to maximum utilization in Japan

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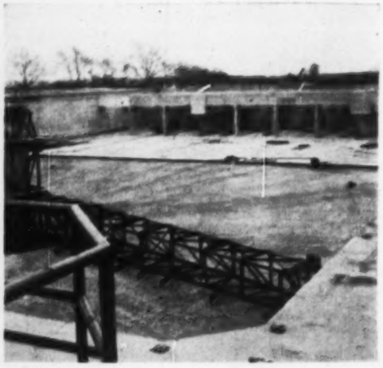

NEW TORRESDALE PLANT at 282 mgd, will be one of largest in world. It features 174 ft dia centrifugal sludge collector.

slow sand filtration and storing of finished water. Essentially, the reconstruction of the plants involves building of new chemical buildings, flocculation and sedimentation basins and rapid sand filters, with the existing pre-settling and finished water basins retained in the new schemes. Existing slow sand filters, occupying 30 times the space that equally rated rapid sand filters do, will be utilized as clearwells for filtered water.

• Torresdale—At Torresdale, for which major contracts have been let, the full new 282 mgd capacity of sedimentation basins and rapid sand filters are under construction on a site just adjacent to existing pre-filters and slow sand filters. Actually, the new facilities (rated at 2 gpm per sq ft of filter area) can accommodate 50% overload continuously. They include a chemical building, four 115 x 185 ft flocculation basins, four 185 x 300 ft x 18 ft deep sedimentation basins with each basin's 185 ft wall common to a flocculation chamber, and 94 rapid sand filters each measuring 18 x 58 ft. Existing slow sand filters providing 150 million gal (mg) storage, will bring clearwell capacity to 200 mg.

Total construction cost at Torresdale will be $21.9 million. Due in large part to not having to build a clearwell beneath or adjacent to the filters, this cost is some $8 million below the norm for an all new 282 mgd filtration plant.

• Lack of space—The cost picture is not quite as bright at Queen Lane because of land limitations. There the existing plant contained 20 pre-filters ahead of slow sand filters and 20 rapid sand filters in parallel. The new scheme, nearing completion, replaces the pre-filters and slow sand filters with rapid sand filters and introduces new chemical coagulation and sedimentation facilities to serve all 40 high rate filters. As at

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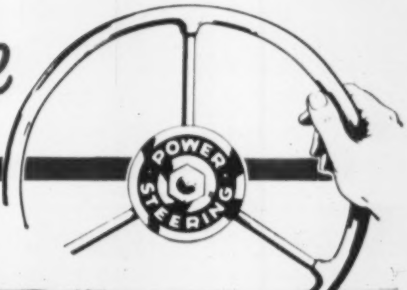

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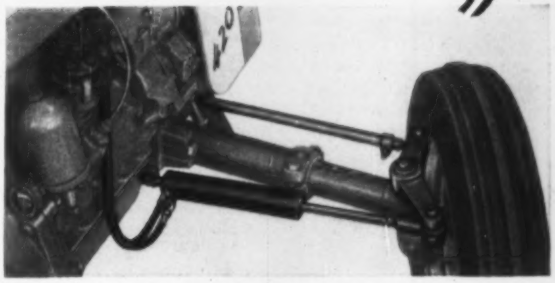

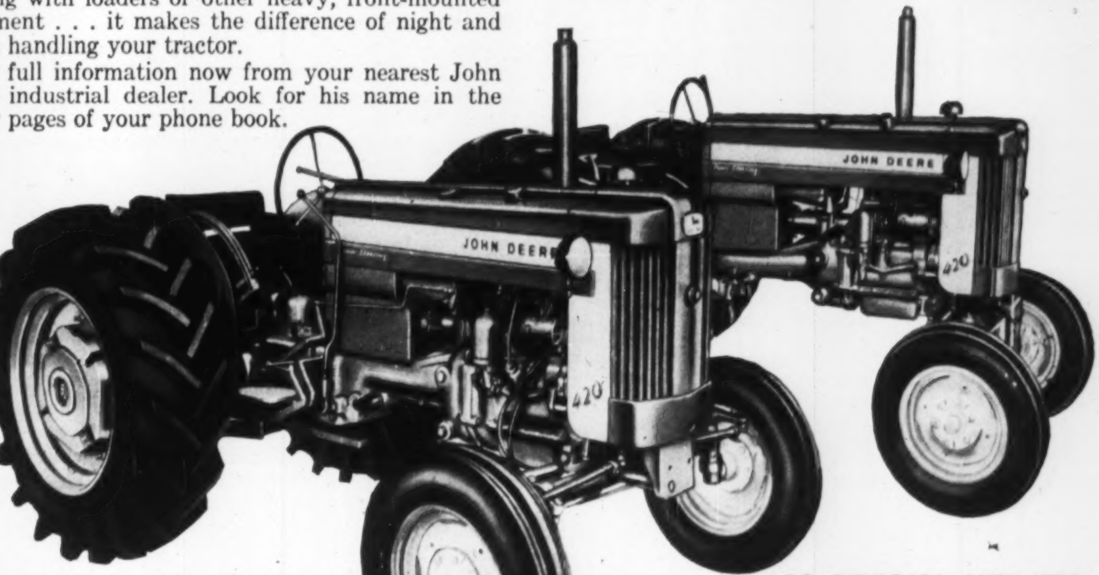

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. . . Revitalized water department is key to success

Torresdale, the huge existing slow sand filters will be a new clearwell.

The only real trouble was the lack of land at the site. There was just enough space across the street to accommodate the new primary treatment facilities, but even here an unusual double decked arrangement of sedimentation basins was necessary. The 20 pre-filters, in the same building as the existing rapid sand filters, are being converted to rapid sand filters.

This work, being accomplished with Queen Lane in operation, is tricky and costly. The pre-filters are 30 ft 6 in. by 40 ft by 10.5 in. deep. The conversion into rapid sand filters involves constructing an effluent channel beneath the filter floor, wash water troughs (of concrete), a drain gullet, some new sections of wall and installing a filter bottom and surface wash mechanisms. Existing concrete surfaces that remain are being stripped and sprayed with 1½ or 2 in. of mesh reinforced gunite.

• **Two-level settling basins**—Across the street, the new coagulation and sedimentation plant has been in operation since 1956. After passing through the chemical building and rapid mix chambers, pre-settled water enters four 103 ft wide by 89 ft long flocculation chambers and travels over and under five baffles in the 89 ft length. Then it enters four contiguous 127 ft long sedimentation basins equipped with conveyor-type sludge collection apparatus. The water continues to settle in lower basins extending beneath the upper level flocculation and sedimentation basins. The lower basins are not equipped with mechanical sludge collectors. Water returns to just beneath the rapid mix chambers (two of them), where 11 ft dia conduits convey it to the filters across the street.

Queen Lane renovations and additions will cost $10.9 million and will convert an old 100 mgd plant into a modern 120 mgd plant capable of 50% continuous overload. A completely new plant of this size would cost about $12 million plus required raw and finished water mains.

Construction at Belmont has not begun, but contracts are scheduled for 1958 letting. Half of the presently rated 70 mgd plant comprises rapid sand facilities, the other half slow sand units. The latter will be replaced with coagulation, sedimentation and rapid sand filtration units to mesh with the existing similar units.

The renovated plant will be rated at 85 mgd (at 2 gpm per sq ft of filter area). Modernization cost is pegged at $5.7 million.

• **New organization**—The current water and sewage improvement programs owe their success to a thoroughgoing reorganization of the Philadelphia Water Department in 1952, under a new home rule charter granted the city. Complete responsibility for design, construction and operation of both water and sewage facilities was given to the Water Commissioner, then and now Sam Baxter.

The charter also decreed that the rates fixed for operating the water and sewer functions should at least equal operating expenses and capital improvement costs. As a result, separate water and sewer funds were established, apart from the general fund of the city. Each of these funds is financed solely by water and sewer rental charges. In practice, a real attempt has been made to operate the water and sewer system as modern utilities.

The charter also set up an interesting rate setting situation. Although the City Council has to approve annual operating and construction budgets, the Water Commissioner is required to set the actual rental rates to meet budgeted expenses.

To get the water program started, rates were boosted in 1953 by 31% to 9.3 cents per 1,000 gal for quantity usage. Just a month ago rates were raised again, effective in 1958, to 12.7 cents per 1,000 gal, which is still among the nation's lowest. Sewer service charges vary from 95% of the water rent for household users to 50% for the largest water consumers.

• **More than construction**—The revitalized Water Department has brought other heralded results aside from the utilities construction programs. It is now generally conceded to be one of the most progressive in the country.

Three prime examples are its purchase of a fluid network analyzer, recent hiring of research personnel and an eminently successful incentive pay system in its water meter repair shop.

In March, 1956, the Philadelphia Water Department became the second in the land to install a McElroy fluid network analyzer, a machine wherein non-linear electrical resistances in conjunction with impressed voltages produce currents that are analogous to fluid flow in pipelines.

Commissioner Baxter and his engineering division are enthusiastic over the results to date. They estimate the analyzer is saving a full 90% of new design time. Even more startling is an estimated construction saving of $350,000 for a pipeline network serving 50,000 persons and 1,100 acres of light industry in the proposed Eastwick redevelopment area through better design (the analyzer cost $45,000). Total estimated cost of the Eastwick distribution system is now $2.8 million.

Commissioner Baxter has long felt that municipal water and sewage agencies have an obligation to accomplish at least small amounts of research and development work, an aspect which up to recently has pretty much been left to equipment manufacturers, federal and university research centers and earlier to consulting engineers. Only a handful of the cities, most notably Chicago, are doing very much in this regard. Recently, Mr. Baxter was able to start Philadelphia on its way, by hiring M. B. McPherson, formerly associate professor of civil engineering at Lehigh University, to head up a small research effort on a full time basis.

Men Behind the Program

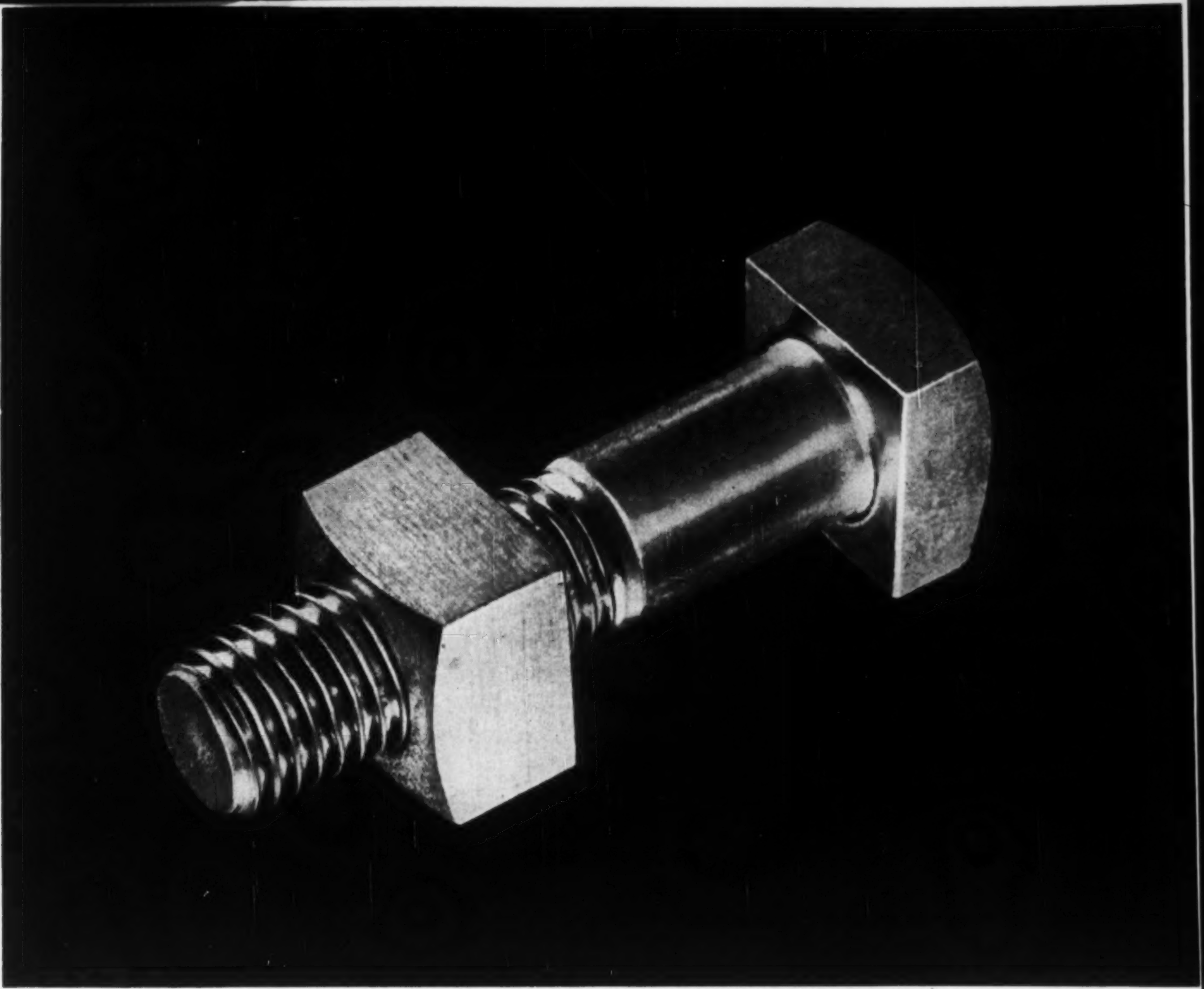
Philadelphia-born-and-bred Samuel S. Baxter is the moving force behind his native city's remarkable resurgence in the water and sewage fields. As Commissioner and Chief Engineer at the Water Department, he holds sway over all aspects of these utilities systems: desgin, construction maintenance, operation and setting of rates.

Now 52, Commissioner Baxter started with the city of Philadelphia in 1925 and steadily worked his way up in various engineering positions. He attended Drexel Institute of Technology in Philadelphia at night. In 1942, he went on active duty with the Corps of Engineers and emerged in 1946 as a major. During his post-war stint in the Public Works Department, one of the first prestressed concrete bridges in the U. S., the Walnut Lane Bridge, was designed and built.

Very active in professional and technical societies, Mr. Baxter has been president of the American Public Works Association (1947), and president of the Philadelphia Section of the American Society of Engineers (1952), and is a stalwart member of the American Water Works Association and the Pennsylvania Sewage and Industrial Wastes Association.

Directly under the Commissioner are Max Barofsky, Deputy Commissioner for Sewer Operations, and Gerald E. Arnold, Deputy Commissioner for Water Operations. John Briggs is assistant chief engineer in the engineering division. Victor A. Appleyard is chief of water operations and Ralph A. Hoot is in charge of sewage treatment.

Morris Knowles, Inc. of Pittsburgh has been consulting engineer on filter plant design.



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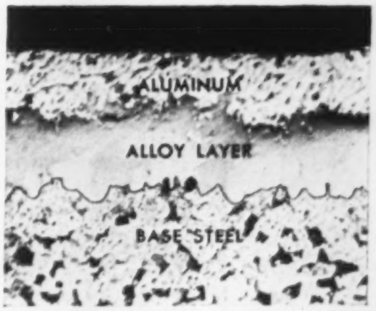

Photomicrograph of Bethalume coating. Pure aluminum is bonded to base steel by iron-aluminum alloy.

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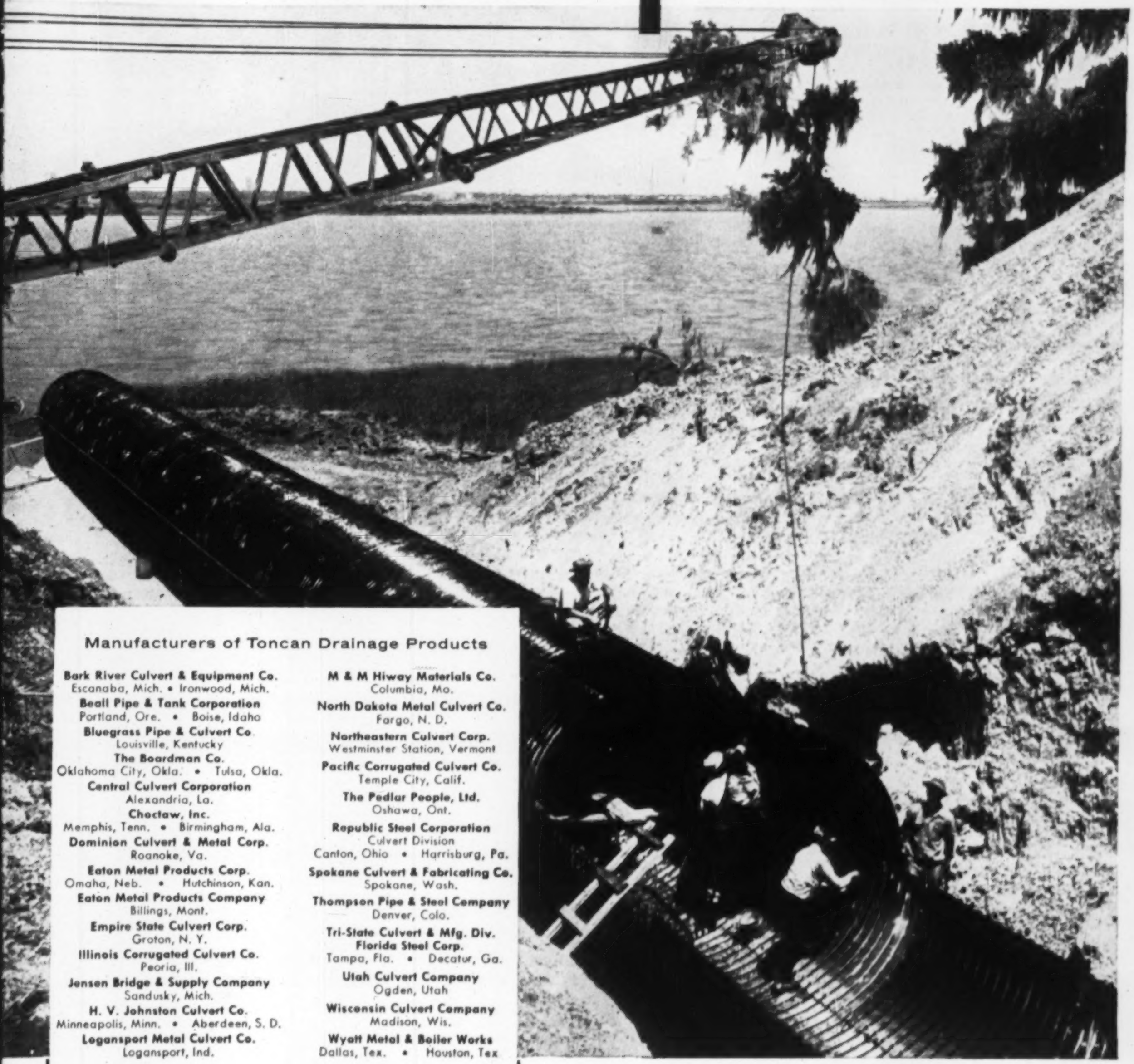

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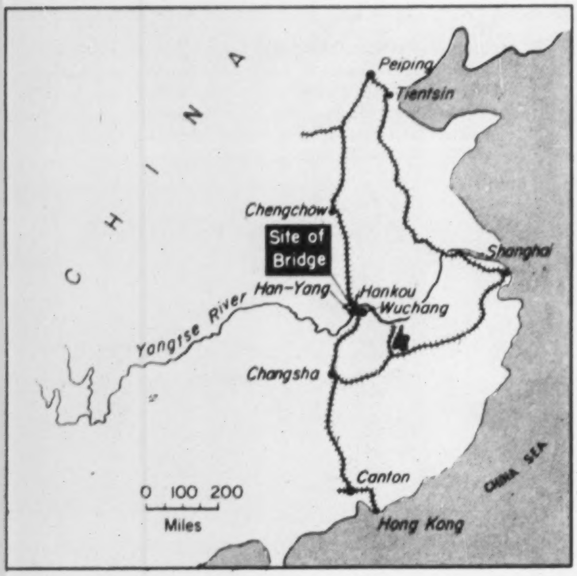


The center spans are being erected (right) on a railroad bridge between Han-yang and Wuchang over the world's third longest river

Yangtze River Bridge Built On Concrete

John M. Hingst
First Lieutenant, Corps of Engineers
United States Army

A mile-long double deck bridge across China's Yangtze River, carrying railway tracks, vehicular and pedestrian traffic and costing some $33 million, will be completed by January of 1958, according to the Yangtze River Great Bridge Construction Bureau.

The 9 span structure is to bridge the river between Han-yang and Wuchang to become the final link to Hankou by way of the recently completed Han River highway (1956). When completed it is expected to provide an efficient, integrated transport system in the interior.

Flowing practically through the center of China, the Yangtze is swift, turbulent and frequently floods its banks. Third longest river in the world, it has so far defied man's efforts to bridge it.

• Action starts–A first survey of the area was made in 1913, and later, three more surveys were conducted.

In 1950, the Communist government instructed its Ministry of Railways to begin designing a bridge and resurvey the area.

Using the compiled data from previous bridge surveys and from three years of geological surveys of the Yangtze valley, the ministry projected preliminary center-lines at eight different locations. Russian engineers were consulted for design and final site location.

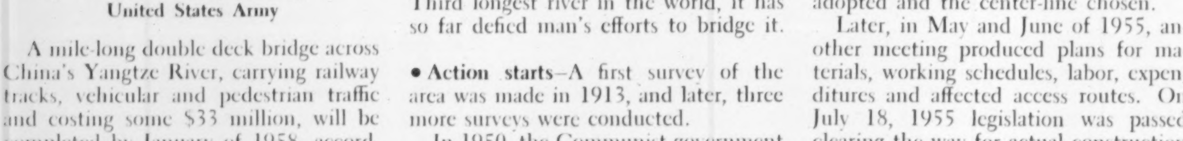
In May of 1953, after a series of conferences between Chinese and Russian bridge engineers, the initial design was adopted and the center-line chosen.

Later, in May and June of 1955, another meeting produced plans for materials, working schedules, labor, expenditures and affected access routes. On July 18, 1955 legislation was passed clearing the way for actual construction of the bridge.

• Details – Between abutments the bridge measures a little more than a mile–actually it is 5,468 ft long.

It will have nine spans, each 415 ft long, supported by eight reinforced concrete piers built upon the river bed by what the Chinese call the "concrete tube boring method."

On each bank, at a level above mean



DOUBLE DECK BRIDGE is supported by vertical concrete tubes filled with reinforced concrete and affixed to the bedrock.

Tubes

high water there will be a tower-type end pier. Each of these end piers will contain an elevator and a stairway, for the use of pedestrians as an access to the upper level of the bridge from the street below. Extending from the tower pier toward the abutment on either side will be an overpass, upon which the railway and highway approaches to the bridge are supported by trestles built from a boulevard directly below.

The superstructure is made up of three compound Warren-type trusses which will be continuous over three full spans. The superstructure itself will be 52½ ft high and 75 ft wide. The lowest point on the steel will be 59 ft above mean high water level, 108 ft above mean low water, and 174 ft above the sediment at the deepest part of the river bed.

Of the two levels, the upper is to be a 6 lane highway, 59 ft wide flanked by two 8 ft sidewalks. The lower level will carry a double-tracked, standard-gauge railway.

• Foundation method—The characteristics of the Yangtze River posed problems for the builders.

Mean high water stage is 3,740 ft wide and up to 115 ft deep. During some years there are differences of 50 ft between high and low water levels. Current velocity at midstream often has risen to 10 fps. The thickness of unconsolidated sediment in the bed of

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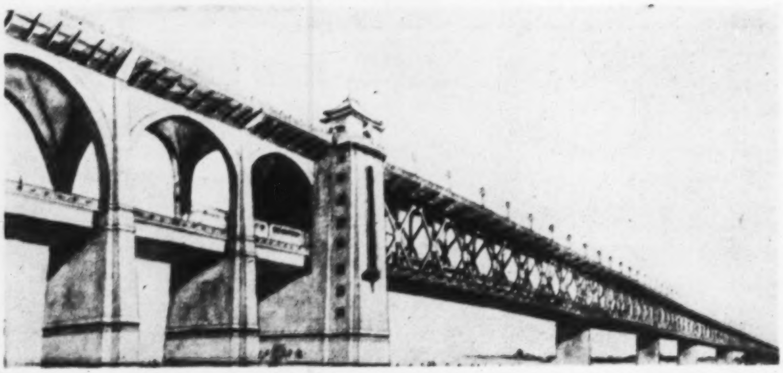

TOWERS at each end contain elevators and stairways as an access for pedestrians to the upper level of the bridge from the street below.

the river varies from place to place, and the underlying bedrock is faulted and not entirely homogeneous.

The most difficult problem was construction of underwater foundations for the piers. Because of the great depth and velocity of the water during periods of high water, compressed air caissons —standard for other major bridges in China—were rejected. These methods would be practicable only during the low-water season, which lasts only about three months on the Yangtze.

Consequently "concrete tube boring" was adopted (ENR May 9, p. 78). This method is said to have been used with success in Russia, and was suggested by S. Silin, a Soviet engineering advisor assigned to the project.

The procedure called for sinking to bedrock rows of six hollow large-diameter reinforced concrete tubes, perpendicular to the bridge center-line. Each tube was 5 ft in outside diameter and hollow throughout its full length except for a portion around the base, which had a solid concrete cross-section.

Each row of six tubes constituted the foundation for one pier. After these tubes had been sunk to bedrock, some 30 to 36 cores, about 4½ in. in dia were drilled vertically, through the base of each tube into the underlying bedrock for a depth of at least 20 ft. After all water and rock cores were removed, steel reinforcing rods were inserted into the drill holes, and concrete was then cast into the columns and down into the drill holes until all voids were filled. Thus after the concrete had set, the columns were firmly affixed to bedrock.

The next step was to lower a form consisting of a steel cofferdam around each row of columns. The inner surface of this form was shaped according to the desired outline of the finished pier. Concrete was then poured into the space between columns and cofferdam. Using this method, the bridge builders were able to avoid practically all human underwater work and could proceed throughout the year.

- **Huge labor force** — Approximately 15,000 persons, most of whom are unskilled, are employed full time on the project. Of these, some 4,000 are assigned to the construction of the bridge itself. Then 7,500 are assigned to railway access routes, 3,000 are working on access highways while 500 others provide clerical and logistic support.

Not included in this figure are engineers, supervisory personnel and some 25 experienced Soviet engineers who went to China as advisors. They provide advice and technical assistance, even giving lectures on various construction problems and procedures.

Work goes on around the clock, with three shifts of eight hours each, seven days a week. The project has been plagued by accidents. Safety measures apparently leave much to be desired. At least two workmen have been killed and many others injured in accidents since work started. One floating crane drifted out of control during the summer of 1956 and caused considerable damage by hitting a pier.

As scheduled under the First Five Year Plan, the railway and highway portions were to be completed and opened in 1958 and 1959 respectively.

In March 1956, because of good progress, a new schedule was adopted setting the opening date for the railway portion as October 1957 and that for the highway at January 1958.

Originally the estimated cost of the entire project including the approaches and access roads was about $70 million. The cost was actually about $67 million. The bridge required 320,000 tons of concrete and 264,000 tons of steel. The cost of these materials amounted to $33 million.

Information contained in this article was drawn from various sources, including People's China magazine, official Communist Chinese government news releases as printed in "Jen Min Jih Pao," Radio Moscow talks and from news items in the Japanese Asahi Evening News.

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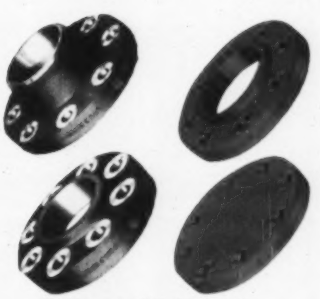

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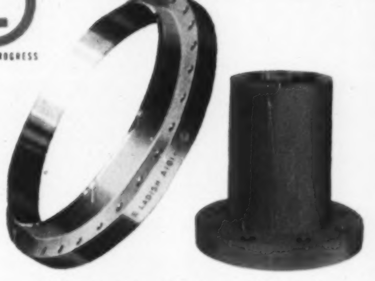

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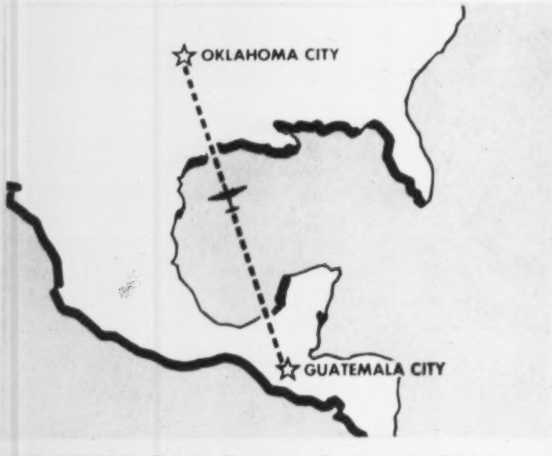

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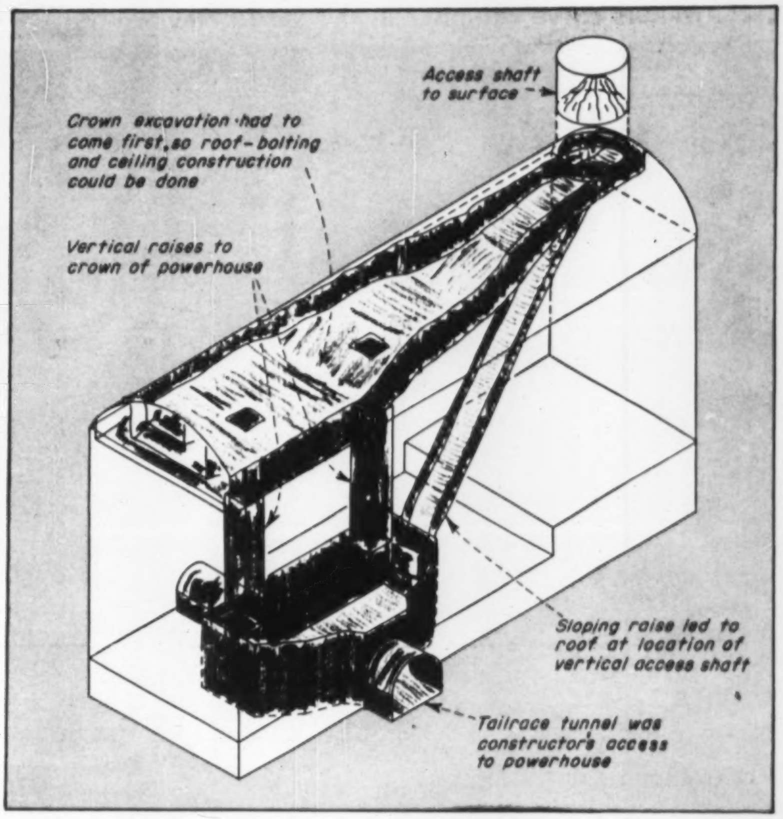
REINFORCED CEILING is pneumatically placed concrete. Wire mesh is fixed to roof bolts by welded cross of reinforcing rod. But first . . .


Access shaft to surface
Crown excavation had to come first, so roof-bolting and ceiling construction could be done
Vertical raises to crown of powerhouse
Sloping raise led to roof at location of vertical access shaft
Tailrace tunnel was constructor's access to powerhouse

MINERS MADE THEIR WAY TO ROOF of powerhouse via vertical and sloped raises from the tailrace access. It's Haas Powerhouse, the first major plant of its type in the U. S., where . . .

PG&E Goes Underground for Power

Underground powerhouse construction is different. You start with the roof and work down. And to make matters even more unusual, constructors of the first major underground powerhouse in the U.S. are using a roof bolt new to this country and pnuematically placing a wire-mesh reinforced ceiling.

The job is the Haas powerhouse of Pacific Gas & Electric Co. on the Kings River project in California. It is part of the $80 million Kings River project in California's Sierra Nevada that also includes Wishon and Courtright Dams (ENR Aug. 28, p. 38). The powerhouse will produce 128,000 kw capacity in a solid rock chamber 500 ft below ground surface. Water from behind Wishon Dam will be led to the Haas turbines through a 6½ mile, 13 ft unlined horseshoe tunnel and a 4,560 ft steel penstock providing a total of 2,444 ft of operating head.

Reasons for locating the powerhouse underground are largely economic. The design substitutes 2,000 ft of unlined tailrace tunnel for a longer length of heavy (more than 2 in. thick) steel penstock that might have led to an aboveground plant. And the underground location develops 28 ft more head than would a comparable surface plant. Working with these economies is the excellent massive granite nature of the rock and good PG&E experience on tunnel construction in the Sierras.

Contract for the underground excavation was awarded in October, 1956, to Kings River Constructors, a joint venture of Morrison-Knudsen Co., Inc., Henry J. Kaiser Co., Macco Corp., and B. Perini & Sons, Inc. The contract includes the 6½ miles Haas tunnel as well as excavation of the powerhouse and construction of its roof.

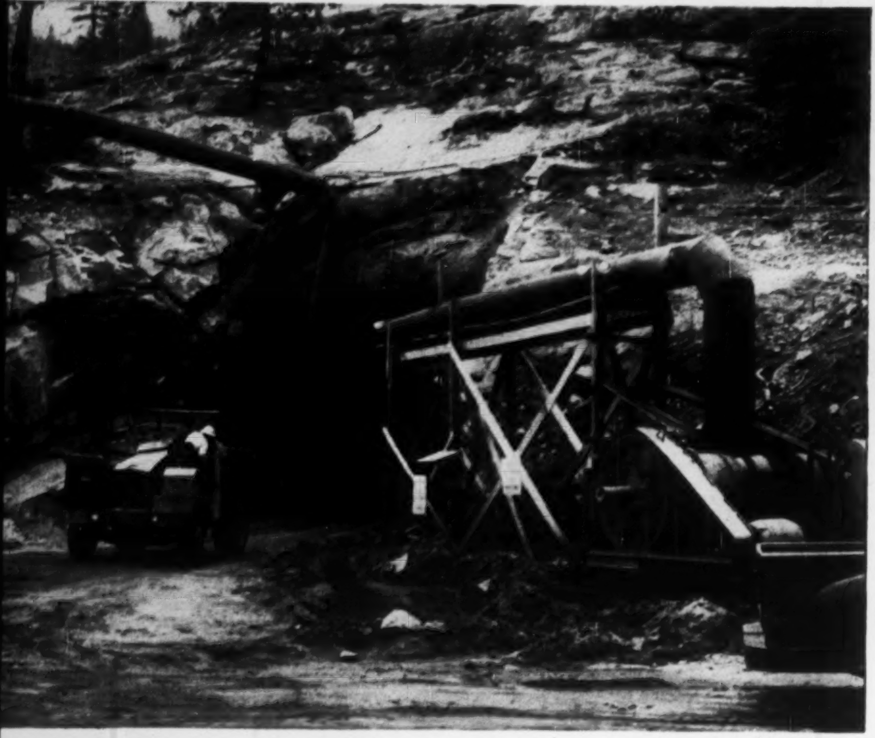
The powerhouse will be 56 ft wide, 173 ft long and 85 ft high. Construction access is by the 2,000 ft long, 17½ ft high by 15 ft wide horseshoe tailrace tunnel. This bore was drilled from a truck-mounted jumbo as the first construction operation. (The free-flow tailrace tunnel will have a catwalk in its arch to serve also as emergency access during power plant operation.) Also involved in the powerhouse construction is a 400 ft high, 18 ft dia vertical access shaft and 750 ft of penstock tunnel inclined at 70 deg to the horizontal.

• To get to the roof—Excavation of the powerhouse started with three raises. Two are 8x8 ft vertical shafts that extend from the end of the tailrace tunnel to the crown of the powerhouse. These shafts are in the deepest part of the powerhouse excavation where discharge from the turbines will feed the tailrace. The third raise is 5x10 ft and angles at 51 deg from vertical the end of the tailrace tunnel to reach the far end of the powerhouse, directly under the vertical access shaft. Purpose of this sloping raise was to permit immediate start of construction on a pilot bore for the access shaft.

From the top of the three raises an 8x8 ft crown drift was excavated the full length of the powerhouse. Working from this crown drift and starting at the west end, the powerhouse arch was excavated down to 8 ft below the spring line to permit installation of roof bolts and concrete ceiling before full excavation of the chamber. All of this excavation work was done by small jackleg drills and stopers.

After completion of roof bolting and application of pneumatic mortar, excavation of the remainder of the 29,000 cu yd of rock in the powerhouse was begun using self-propelled wagon drills with wet heads. (Water is fed through

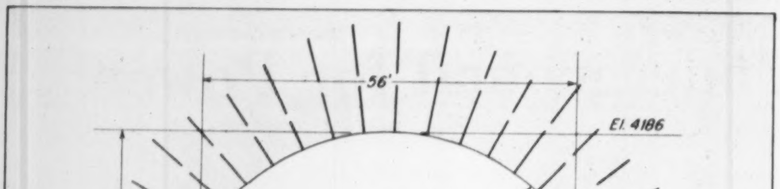
. . . Miners carve chamber in the Sierra Nevada



MUCK HANDLING inside is by a diesel-powered tractor shovel working below the access raises.

◀

MUCK REMOVAL is by diesel truck with exhaust scrubber, through the tailrace tunnel access to the powerhouse.



56'
El. 4186
32' rad
El. 4170
Crane
El. 4162
68'
Grouted roof bolts 10' to 15' long, 3½' c-c above El 4162. Arch roof covered with 4" thickness of wire mesh reinforced (6 ga, 4 x 4") gunite.
Stator
Rotor
Main floor El 4130
Basement floor El. 4113.75
Penstocks El. 4106
Emerg. walkway
Tailrace tunnel
Flow
Max. tailwater El 4101
El. 4090

POWERHOUSE SECTION shows roof bolts that will be sole support of ceiling. There will be no thick concrete arch, just a pneumatically placed covering.

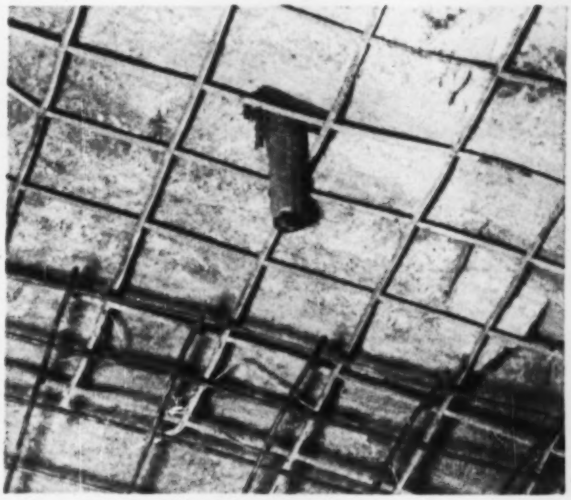
the drill steel to eliminate dust in the underground operation). These units drilled 2⅝ in. dia holes on 6 ft centers with 3 lifts to bring the excavation to completion.

During excavation of the powerhouse crown, muck was fed to the raises by a "slusher." This is simply a scraper operated by an air tugger and cable system. A small self-propelled mucker cleaned up muck pockets not accessible to the slusher.

Muck was removed from the tailrace tunnel at the bottom of the raises by diesel trucks loaded by a larger mucker. Trucks and mucker were equipped with exhaust scrubbers to permit underground operation without danger from fumes.

- **Miners work in cage**—In drilling the 400 ft vertical access shaft, a 6 in. diamond drill hole was first put down from the surface. A cable was threaded through this hole to connect a derrick operating at the surface to a cage at powerhouse level. Workmen rode inside the cage to drill a 6x8 ft pilot shaft from the bottom upward. The full 18 ft dia access shaft then was excavated from the top down.

The penstock tunnel was excavated to full size from the bottom up with workmen working on platforms attached to the tunnel by steel rings set in the tunnel wall.



NEW ROOF BOLT in powerhouse is made up of split tube, into which rod is driven, and out of which grout is pushed through perforations.

MINERS IN POWER TUNNEL work on two-level, rail mounted jumbo featuring drifters on hydraulic jibs.

MINERS IN POWERHOUSE use jack leg drills at work on the crown excavation. Muck was "slushed" down access raised.

• **The new roof bolts**—Roof bolts supporting the powerhouse ceiling are actually 1 in. dia reinforcing rods. Length of the rods at the crown is 15 ft and 10 ft at the spring line; some intermediate rods are 12½ ft long. The "bolts" are placed on 3½ ft centers.

Welded to the bottom of each bolt and in a plan perpendicular to it, are two ⅞ in. dia rods each 2 ft long. These rods hold 6 ga, 4x4 in. wire mesh up close to the roof excavation and also help develop the strength of the roof bolts by serving as sort of "washers."

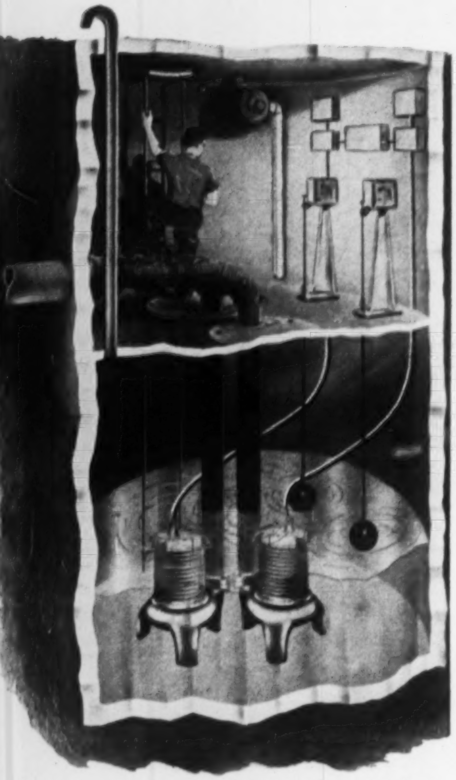
Each 1 in. bolt is grouted into a 1½ in. dia drill hole, by the Swedish-developed Perfo system (ENR Aug. 15, p. 86). This method centers around split perforated sleeves. The half sleeves are filled with a thick mortar and wired together to form a full sleeve. Then the sleeves are inserted in the hole and the rods are driven into the sleeves by pneumatic hammers. As the rods are driven, the mortar is forced through the perforations into the drill hole. Careful calculations of the amount of mortar needed assures filling all drill hole voids.

Purpose of lining the arch of the powerhouse is to make sure that no rock particles fall on the construction workers, or later on the operating equipment. The excavation is in extremely good granite that stands without support. The lining is actually just a precaution. Tunnels on the project, such as the tailrace tunnel and the Haas tunnel, are unlined except at isolated spots.

• **Tunnel construction**—Construction of the 6½ mile Haas tunnel is an entirely different type of operation from excavation of the powerhouse. For the tunnel, excavation is a repetitive production-type operation while the powerhouse excavation involves several completely different operations with little opportunity to develop high production rates.

The tunnel is constructed from two headings through one 990 ft adit, located 12,500 ft from the downstream portal and 19,500 ft from the upstream portal. Some 400 ft at the upstream end was excavated under a separate contract and plugged, as it will be under water late this year when initial storage is developed at Wishon Dam.

Initial tunnel operation was handled

SUBMERSIBLE

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by one crew alternating between upstream and downstream headings after excavating the adit. While part of the crew would be drilling at one heading, the rest of the crew would be excavating at the other. This continued until the two headings were a little more than a mile apart when two full crews were put on. With crews at each heading, production has averaged about 120 ft a day with maximum progress in one day being 131 ft. Each crew is able to get in 2½ to 3 complete cycles per 8 hr shift with the job being on a 3 shift basis.

Drilling is accomplished from a 2 deck jumbo mounting 6 drifters on hydraulic jibs. Tungsten carbide bits drill 8 to 9 ft deep holes, about 65 per round. About 300 lb of 45% powder shot in 10 delays pulls 7½ to 8 ft of tunnel per round, resulting in 90 cu yd of muck.

A rail-mounted mucker loads muck cars which pass near the heading on a California switch. The switch is moved ahead about twice a week.

Ventilating air comes from blowers mounted in the 20 and 22 in. dia pipe. A pair of blowers are located near the portal and other pairs are situated at 3,000 or 4,000 ft intervals providing 11,000 cfm at the heading. Drilling air is provided by 6 in. steel pipe with Victaulic couplings.

The muckers and blowers are electrically powered. For best efficiency, a 4,160 v primary line is led to transformers located near the heading. The transformers are moved as needed and generally kept within 1,000 ft of the heading.

Except for the concrete ceiling, the Kings River Constructors contract is for excavation only. A contract has just been awarded for structural work in the Haas powerhouse to Rothschild, Raffin & Weirick of San Francisco. And penstock installation is being handled by Consolidated Western Steel Corp.

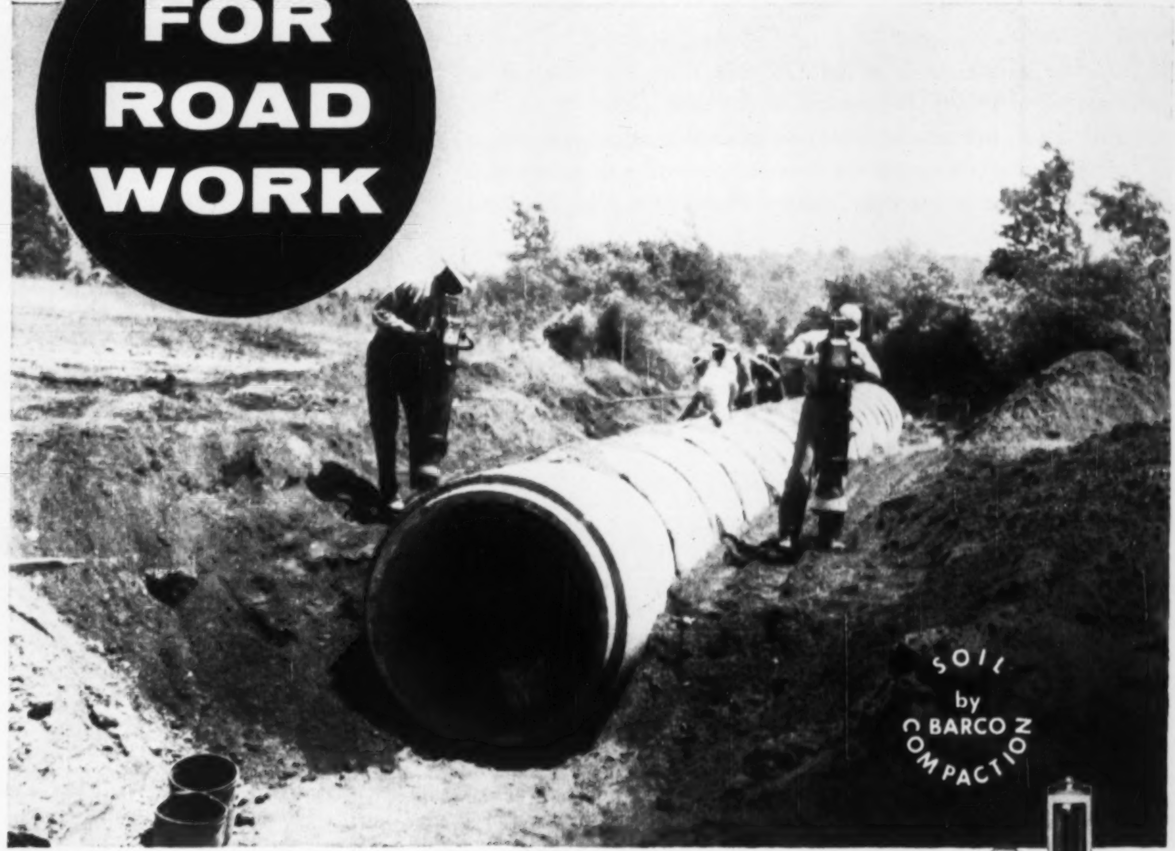
• Constructors, engineers—The Kings River work is a project of the Pacific Gas & Electric Co. for whom Walter Dreyer is vice president and chief engineer. Design is under the general supervision of Carl Appleford, chief civil engineer and J. B. Cooke, supervising engineer. Construction is under supervision of A. J. Swank, vice president in charge of general construction; H. W. Haberkorn, manager of hydroelectric construction, Joe Pirtz, project superintendent, and George Thacher, project engineer.

For Kings River Constructors, Carl Larsen is powerhouse project manager, P. M. Lee is tunnel project manager and John Erdle is project engineer.

EDITOR'S NOTE: **This is the second of two articles in PG&E's Kings River project.**

Tamping fill around 4 ft. concrete pipe culvert on New York State Thruway Extension near West Seneca, N. Y. The Barco Rammers are owned by S. J. Groves & Sons Co., Syracuse, N. Y. (Photo: CONSTRUCTIONEER)

FOR ROAD WORK



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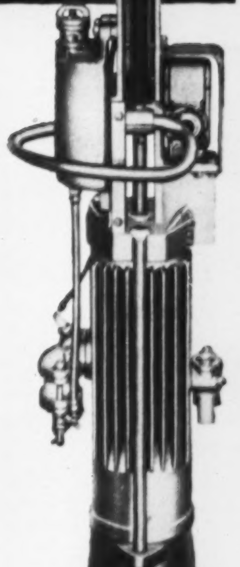

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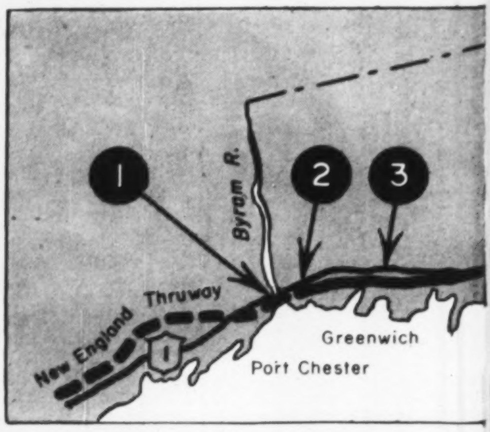
With a lot of work still to go . . . .

Because of the route of the 129 mile road that takes it at water-level and through many of the state's most industrialized areas; because of steel and cement shortages; because of legislative changes in requirements for width at the eastern end; because of the ever present threat of a New England winter . . .



Connecticut Pike Builders Race

Paving and bridge erection on one end, but a lot of grading, rock work and fills on the other, are the story on Connecticut's 129 mile turnpike as contractors rush toward a still-held end of December completion date.

Whether the original date will be met—since the work has been delayed by shortages of steel and a strike in cement plants—is open to considerable debate. However, if the date isn't met, it certainly won't be for lack of trying by all concerned.

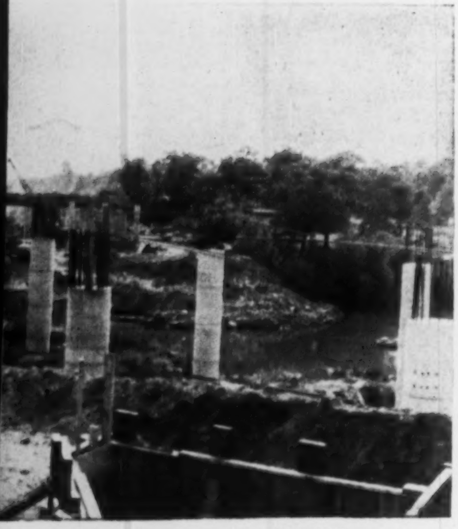
A cruise down the length of the turnpike from its western terminus at the Byram River in Greenwich, which marks the boundary between New York and Connecticut, to the Rhode Island line near Killingly, Conn., shows this state of affairs:

- Along the first 53 miles of road from Greenwich to the hamlet of Branford (east of New Haven) and at various spots from there to New London, grading is almost complete at all points —except for some relatively minor backfilling at bridge abutments and the like.
- From New London to Killingly, where the road angles northeastward toward Rhode Island, a good deal of grading remains to be done, including a number of major fills and rock cuts. However some paving is going forward.
- The work on the last 38 miles of the highway, from the town of Waterford to the Rhode Island border is further complicated by the fact that the 1957 state legislature voted to change this section from the planned 2 lane to a 4 lane highway.

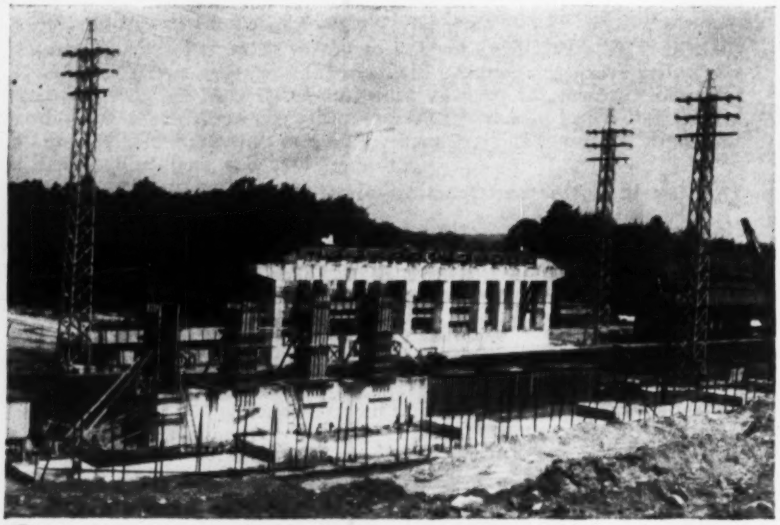
New contracts have been let, but the amount of work involved in building the second two lanes will be considerable.

At the beginning—One piece of the highway that, quite definitely, will not be completed until December of 1958, is the bridge over the Byram River, at this point an inlet from Long Island Sound.

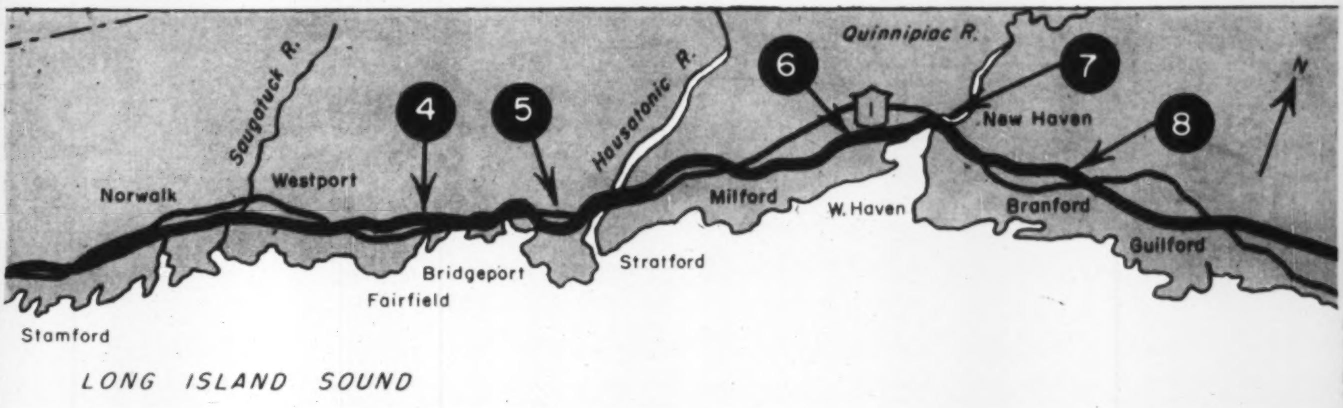
The bridge, which is under contract to Moore & Lopier, of New York City, will be the final connecting link between the Connecticut Turnpike and New York state's 15-mile-long New England Thruway, coming up from New York City through lower Westchester County (ENR June 20, p. 52). Foundations for this structure are still



① **START OF TURNPIKE** (see map) will be this bridge over the Bryam River, at the New York-Connecticut line.



② **CROSSING OVER NEW YORK, NEW HAVEN & HARTFORD RAILROAD** main line at the town of Cos Cob calls for ticklish work handling steel over busy railroad, live wires. Also tight train schedules may not be interrupted for construction.



For the Finish Line

being put in while highway construction goes on on both sides of the stream.

However, from the banks of the Byram eastward, paving operations are in full swing on a section that in a total distance of 13,800 ft includes eight bridges and one very large box culvert, as the road goes through the populated sections of Greenwich.

The box culvert, 22 ft 6 in. wide by 20 ft high by 200 ft long, was required by Connecticut and Greenwich officials to provide ample capacity for flood waters from heavy upland rains which occasionally course through this area on their way to the Sound. Engineers explain that in time of hurricane or northeast storm, tide in the bays sometimes piles up several feet high along the shoreline and has caused occasional flooding to occur in the upland areas.

The biggest bridge in this contract, under general contract to Slattery Rock Co. of New York, is a structure carrying the turnpike over Delevan Ave., the structure being 103 ft long, 128 ft wide (it will carry six 12 ft traffic lanes, two 10 ft shoulders which are being built to first-class highway standards, and a 15 ft center mall).

As will all of the first 53 miles of the turnpike, up to just east of New Haven, the highway will be paved with portland cement concrete and will carry the equivalent of four traffic lanes in each direction—counting the built-up shoulder.

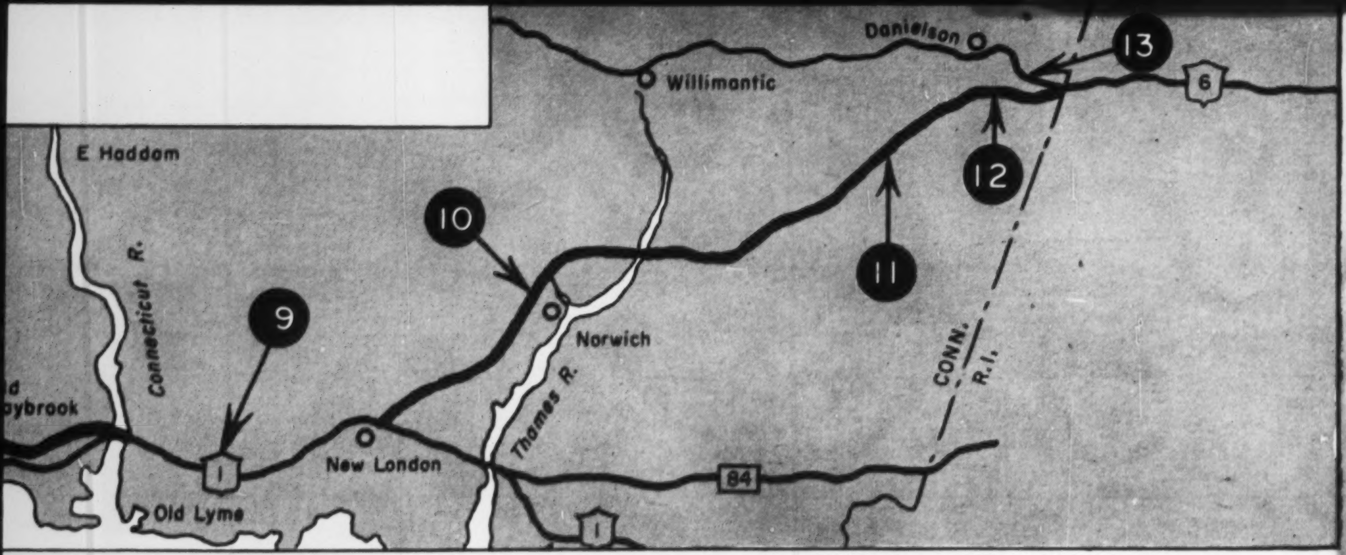
Paving specifications for this section call for a compacted gravel base varying from 6 in. in depth on earthfill in rock

❻ **MUSCLE-POWER** goes into the paving too. Here an approach ramp near New Haven gets final course.

❸ **MIANUS RIVER BRIDGE** at Greenwich is one of hundreds of bridge structures that will form part of this pike.

❹ **PAVING SPREAD** near Fairfield is full-size, with paver, spreader, two screeds, working on outside lanes first.

❺ **PAVER** pulls its own spreader through winch and sheaves on paver, spreader bar working on wheels riding forms.



areas, with 10 in. reinforced concrete slabs on the outside lanes and 9 in. slabs on the inner lanes.

• **Bridges and more bridges** – With bridges averaging one for every 1,500 ft on the entire 129 mile length of the turnpike, one of the principal problems for contractors has been obtaining steel (all of the structures excepting box culverts are designed in steel) and erection –sometimes in peculiarly difficult locations.

One example of this is a bridge crossing the main line tracks of the New York, New Haven & Hartford Railroad at the tiny commuter town of Cos Cob. Here Peter Mitchell Contracting Co. of Greenwich first had to raise four high tension wire towers to a height of 80 ft over the track level before any further work could be done. The bridge itself must cross the 6 track electrified railroad line and will have a 500 ft total length between abutments, its main girders being 115 ft long and weighing 22 tons each.

Most serious problem for the contractor will appear shortly, when steel erection begins. Maximum time between trains on the railroad is 10 minutes, and, in commuting hours in the morning and evening, the time interval between trains is measured in seconds. And by the requirements both of the railroad and the state, the railroad operation may not be interrupted for this construction work.

A short distance above Mitchell's job at Cos Cob is the Mianus River bridge, at Greenwich. Built on a long curve in order to achieve height at the center span the structure will be 2,650 ft long, carrying two 41 ft roadways, a 4 ft mall, and a 2 ft 10 in. safety walk. The main span of the deck girder structure will be a 205 ft crossing of the stream, 45 ft clear of mean high water.

The structure, designed by Tippetts, Abbett, McCarthy & Stratton, New York engineers, and under general contract to Moore & Lopier, has 23 piers. Six of these are at a 53 deg skew to the roadway in order to accommodate the channel direction. The main piers are carried down to bed rock, some 50 ft below water level. Other piers stand on steel H piles.

• **Biggest**–The most costly bridge on the turnpike is the $12.1 million, 2,679 ft structure over Bridgeport harbor. This bridge, with a channel span

⑦ ONE OF THREE MAJOR BRIDGES is the crossing of Quinnipiac River at New Haven. Pavers follow right behind steelworkers.

⑧ ASPHALTIC CONCRETE PAVEMENT (right) starts just east of New Haven. Heavy treatment of paved shoulders is apparent.

⑨ PLENTY OF FILL is needed in section where turnpike will follow the of 150 ft and a clearance of 65 ft 3 in. over mean high water is now being erected by the Terry Contracting Co. of New York. Foundations were put in by A. S. Wikstrom, Inc., of Skaneateles, N. Y.

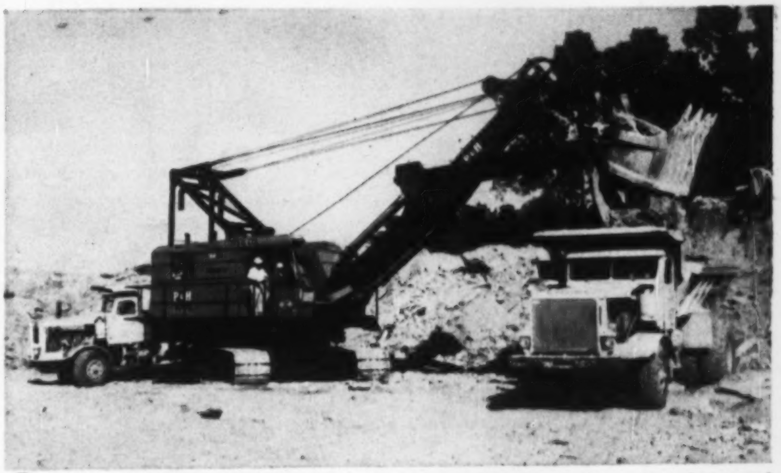
A second major structure is across the Housatonic River near the town of Stratford.

Longest high level bridge on the turnpike is the 3,769 ft structure crossing the Quinnipiac River in the middle of New Haven. Remarkable about this structure is the center span, a 387 ft continuous girder span which is believed to be the longest in the United States. Flanked by two side spans of 259.5 ft each, the main girder section is being placed in two pieces—a top and a bottom piece, joined together by a horizontal splice. The depth of the girder varies from 22 to 13 ft. Bethlehem Steel Co. is the superstructure contractor, with Moore & Lopier as substructure contractors. D. B. Steinman of New York is designer.

• **Asphalt paving**—Just east of New Haven, at Branford, the turnpike drops down from nearly eight lanes to four lanes plus shoulder. Here asphalt is used (based on a decision announced by the Connecticut State Highway Department late in 1955 [ENR, Nov. 3, 1955, p. 25] after a furious controversy over the type of paving to be used). With the exception of one spot where an existing 2 lane highway is to be widened to 4 lanes and become part of the turnpike, and at bridges, the turnpike will be asphaltic concrete paved from this point to its end.

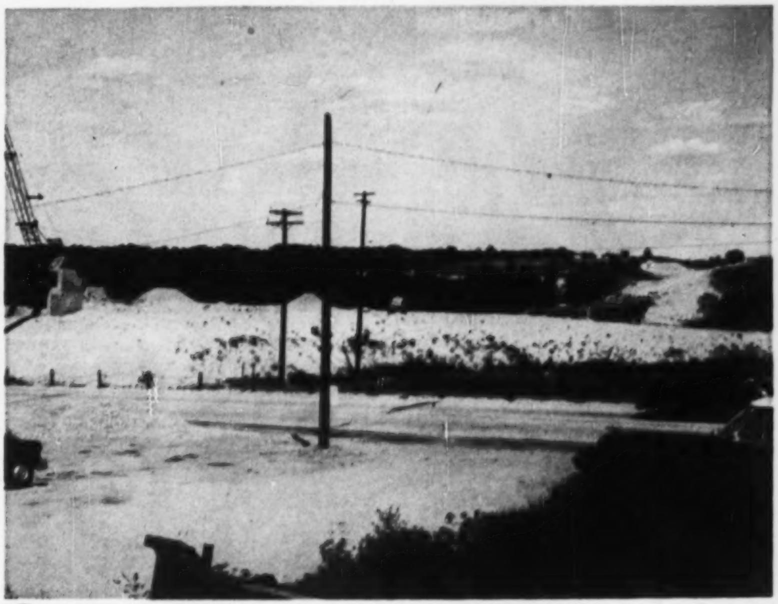
The section to be widened is a 10

existing two-lane Route 1. Here a peat bog is removed, refilled with sound material.

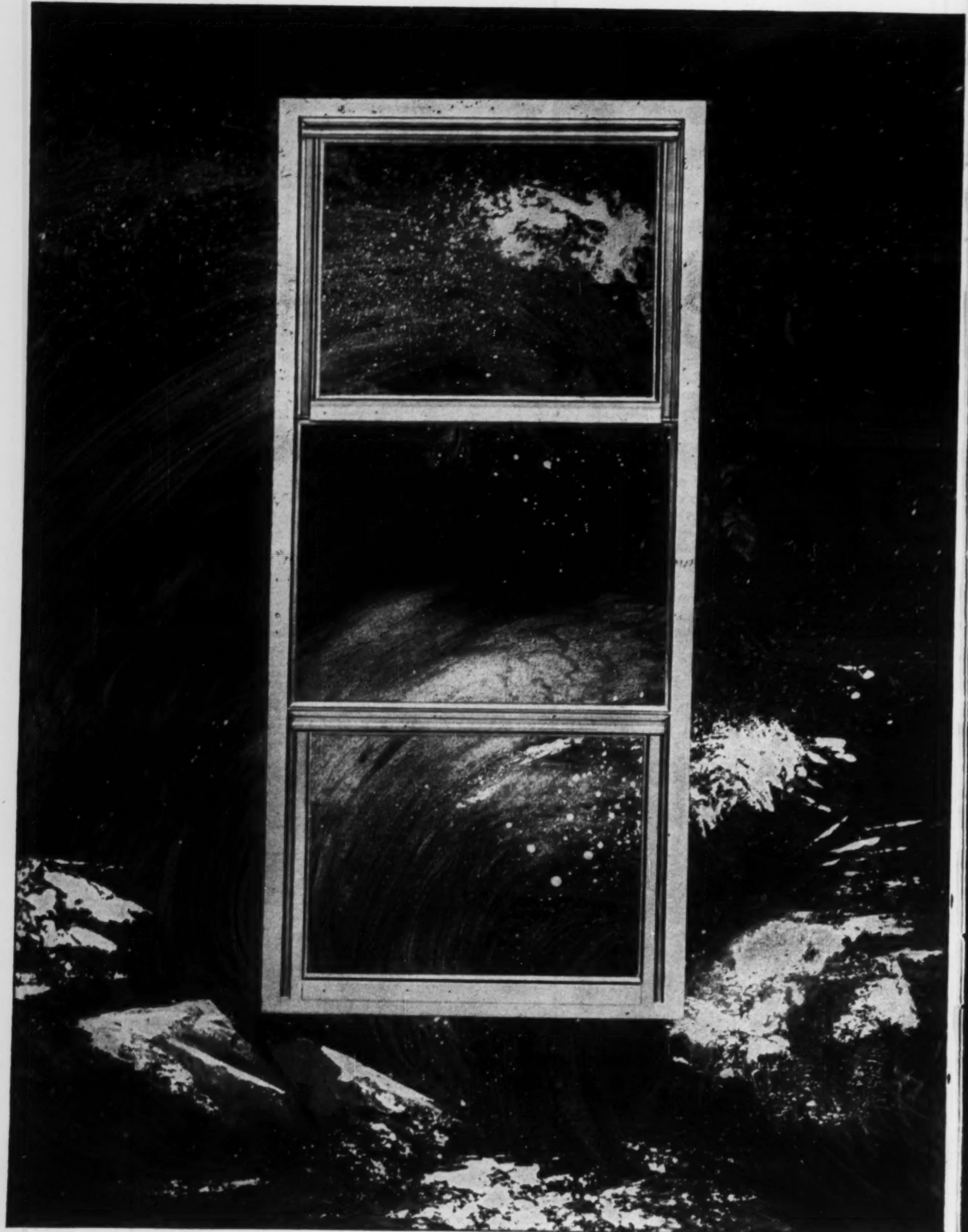


⑫ **700,000 YD OF ROCK** **is coming out of this cut at the extreme east end. Most of the rock goes into a fill a mile and a half away.**

⑪ **ASPHALTIC CONCRETE** **pavement goes down on eastern end. Originally planned as a two-lane section, roadway width here will now be doubled.**



⑩ **STILL TO BE DONE** **are bridges and final grading as road approaches its eastern terminus. A bridge every 1,500 ft is standard.**



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FENLITE is an amazing new process that completely protects the steel. Fenestra Steel Windows with FENLITE never need painting. Yet they cost no more than ordinary steel windows with two-coat field painting.

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It takes eight separate steps, completely controlled with electronic precision, to complete the exclusive FENLITE process. A lifetime zinc "surface" actually becomes part of the basic steel structure of the windows. Then a special treatment "passivates" and chemically polishes the zinc for even longer life and a gleaming, attractive finish. When put to the toughest test of standard 20% salt spray exposure, this treatment resists the start of corrosion 3 to 12 times longer than ordinary zinc "coating."

FENLITE also prepares the window for a tight glazing compound bond and for *decorative* painting, if you desire.

An illustrated-in-color brochure is prepared to fill in the details on FENLITE for you. Why not call Fenestra's nearest representative today? He is listed in the Yellow Pages. Have him visit you at your convenience and bring a sample of FENLITE Finish for your close inspection or mail coupon below.

The Fenestra FENLITE Finish is also available on the complete line of Fenestra Intermediate Steel Windows for schools, office buildings and other fine structures.

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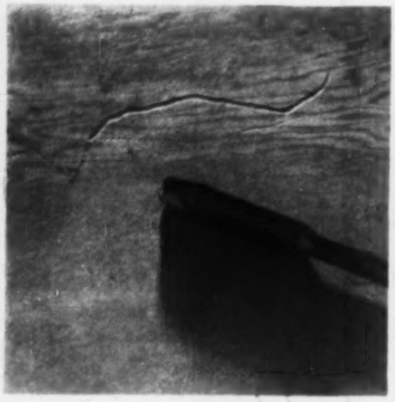
Rubber Tips Prevent Scars on Finished Concrete



Deep gouges and scars from steel vibrator tip on form face results in additional expense of clean up work.

Smooth finish concrete is produced by use of rubber tipped vibrators because they do not damage form face any more than ordinary pencil eraser. Extends the life of reusable forms.

More and more contractors rely on Viber Rubber Tipped Vibrators to end form face damage to concrete forms. Replaceable rubber tips, a Viber exclusive feature, eliminates possibility of accidental gouging or scarring of form faces, and expensive grinding or hand finishing of blemishes caused by gouged forms.

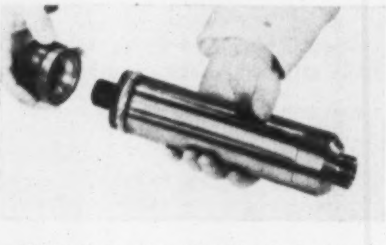
Where exposed concrete surfaces are an important part of the job, Viber Rubber Tipped Vibrators assure a perfect finish. They extend the life of your costly forms and end patching and replacement expense.

Another advantage of the replaceable rubber tip (where most wear occurs) is that it results in longer vibrator housing life.

Machined steel base and super-tough molded rubber body are combined to provide positive mechanically interlocked metal-to-rubber anchorage. This prevents any possibility of rubber coming off until it is ready for replacement. Tip replacement requires only the time necessary to unscrew the old tip and replace with a new one.

Standardize now on Viber Rubber Tipped Vibrators as other leading contractors have done.

Write for illustrated literature and name of nearest authorized distributor. Viber Company, 726 South Flower St., Burbank 12, California.



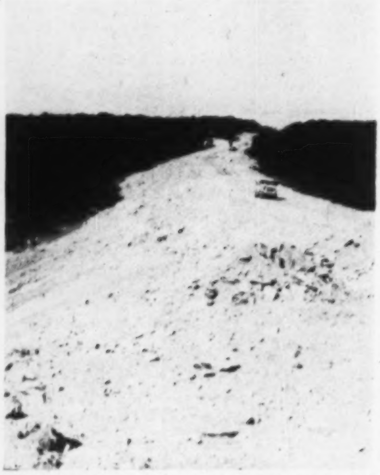
Rubber tip is easily replaced by simply unscrewing worn part and replacing with new tip.

VIBER CO

VIBRATORS

Pioneers and leaders in the manufacture of vibrators.

. . . To the end



⑬ **END OF THE ROAD** (and the rock cut in Fig. 12) is beyond the trees at the Rhode Island line at upper right. This fill must be doubled in width.

mile stretch of road from the east bank of the Connecticut River beyond Old Saybrook, to a point just west of New London. Here U.S. Route 1—the Boston Post Road—which the turnpike parallels and crisscrosses for all of its course up to this point—will become part of the turnpike by the process of adding two additional lanes. Right of way for this project has long since been acquired, but some major fills will be required to accomplish the widening plan.

• **Open country**—From a point just west of New London, the turnpike angles northeastward and plunges into rural and semi-rural areas, plunging through a solidly-built urban area. Here, also, the road begins to enter hilly country and rock-cuts and fills become the rule. A good deal of work remains to be done in this section.

Probably the biggest cut anywhere on the turnpike is one at the very last section of the turnpike, as it approaches the Rhode Island state line. In this area, the M. A. Gammino Co. of Providence, has a single cut where, in a distance of 8,000 ft, they eventually will move 741,000 yd of rock (some of it sandstone, some of it mixed agglomerate) about 1½ miles to make a 60 ft high fill across a valley and peat bog.

Some paving work is going ahead on this section, on the already graded sections of the planned 2 lane highway.

However, with the recent decision of the state legislature, much of this work must now be duplicated.

The work is under the general supervision of the Connecticut Department of Highways, with some 34 firms of consulting engineers on various sections.

Despite 25-ton loads . . .

hauled over "the worst possible" terrain . . .

nylon cord tires stopped costly bruise damage

W. H. Kearney, President of Onondaga Ready-Mix, Inc., Syracuse, N. Y., reports:

"Nylon cord tires cut road delays 75%, stopped blowouts completely"

"Before we switched our 20 cement trucks to nylon cords 3 years ago," writes Mr. Kearney, "our tires were breaking down under the terrific mauling from sharp rocks, metal stakes, and 25-ton loads. Blowouts due to bruise damage and water rot of tire cord were all too frequent. Nylon stopped these failures completely; road delays are down 75%. We're now able to get up to three times as many recaps, to add about 80% to original tread mileage. We're expecting as much as 60,000 miles on some tires. You can bet that every one of our replacement tires is nylon."

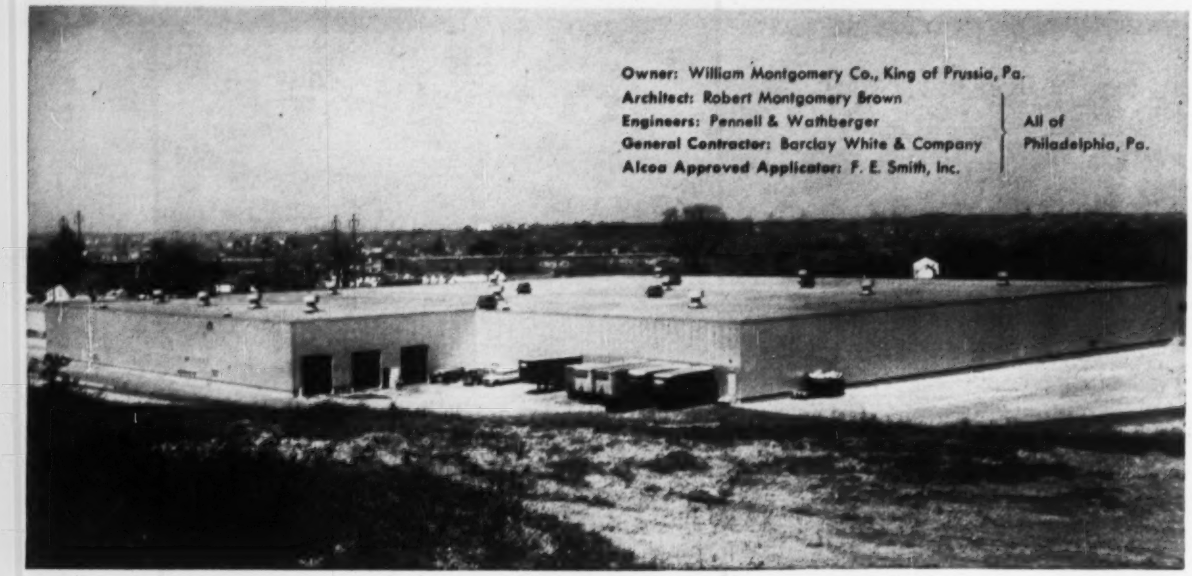
PROVE TO YOURSELF that nylon cord truck tires give more mileage, more retreads, at the lowest cost per mile. Ask your dealer about nylon cord truck tires today. (Du Pont makes the tough nylon yarns, does not produce tires.)

Du Pont nylon for tire cord

DU PONT
REG. U. S. PAT. OFF.

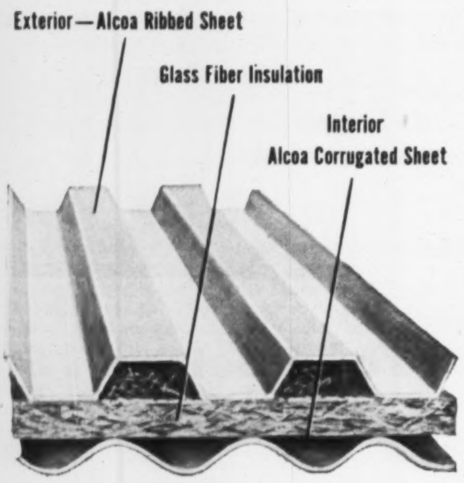
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

For trucks and passenger cars, too . . . the strongest, safest tires are made with nylon cord



Owner: William Montgomery Co., King of Prussia, Pa.
Architect: Robert Montgomery Brown
Engineers: Pennell & Wathberger
General Contractor: Barclay White & Company
Alcoa Approved Applicator: F. E. Smith, Inc.
All of Philadelphia, Pa.

Food warehoused behind a cooling sandwich of ALCOA ALUMINUM



The skin around this huge William Montgomery warehouse is made of insulated sandwich walls of Alcoa® Aluminum—ribbed aluminum sheet on the outside, corrugated sheet on the inside and, in between, one-inch-thick glass fiber insulation. Result: more efficient temperature control for perishable foods!

The cost for this type of insulated construction is exceptionally low, too. In fact, this particular sandwich wall is the lowest cost, insulated metal wall system known! On-the-job fabrication is fast, erection time low and less manpower is required. And when William Montgomery wants to expand, the same speed-of-erection and low-cost advantages will be immediately realized. Regardless, Montgomery will never lift a finger for maintenance. Aluminum never needs painting.

Other types of sandwich walls of Alcoa Aluminum are also available . . . corrugated and V-beam, each with its own special advantages. And now they, with ribbed sheet, are available in a beautiful sea-green color called Architectural Alodine*. Your nearest Alcoa sales office will gladly give you complete data and recommend an Alcoa Approved Applicator as well. Or write to Aluminum Company of America, 860-J Alcoa Building, Pittsburgh 19, Pa.

*Registered Trademark of American Chemical Paint Company.

THE ALCOA HOUR
TELEVISION'S FINEST LIVE DRAMA
ALTERNATE SUNDAY EVENINGS

ALCOA
ALUMINUM
INDUSTRIAL BUILDING PRODUCTS
ALUMINUM COMPANY OF AMERICA

Your Guide to the Best in Aluminum Value

Concrete Skyscraper Enclosed in Glass

One of the tallest concrete buildings in the U. S. is nearing completion in Cleveland, Ohio. Rising 298 ft above Public Square in the heart of the business section, the $20 million skyscraper, known as the Illuminating Building, will have an all-glass exterior on its four sides. Set in aluminum, the glass facade on each side is framed around the perimeter in a narrow strip of marble.

The structure, which will be air conditioned, will provide about 350,000 sq ft of office space in its 24 stories. The lower six floors will be leased to Cleveland Electric Illuminating Co., after which the building is named. The rest will be rented to other firms.

• Is office space needed?—This will be the first major office building to be built in the downtown Cleveland area in 25 years. It is noteworthy that local financiers did not foresee sufficient demand for office space in that city to back an enterprise of this type.

Instead, the major investment came from Vincent Astor and Brooks-Harvey & Co. of New York City. (Astor is also financing the 46 story Astor Plaza office building now being built on Park Ave., New York City.) Another air-conditioned office building, 21 stories high, will be constructed in downtown Cleveland beginning this winter by Tishman Construction & Realty Co., also of New York City.

ILLUMINATING BUILDING, Cleveland's first skyscraper in 25 years—Gray structural glass serves as spandrels between continuous lines of windows.

• Combination columns save space—The 24 story Illuminating Building is a rectangular tower, 225x93 ft in plan, topped by a penthouse machinery room. Average story height is 11 ft 8 in. A bridge at the third-floor level connects to an adjoining building.

While the Illuminating Building has a reinforced concrete frame, only a few of the columns are reinforced concrete for the full height. From the ground to the 8th floor, 46 are combination columns. These have structural steel cores, the largest of which are 14 WF 426, heaviest section rolled. A few of the combination columns extend to the 10th floor.

For the rest of the height of the building, all columns are reinforced concrete. Spacing is about 22 ft c-c.

Fourteen reinforced concrete columns run the full height of the building. These are the lightly loaded members at the four corners of the structure and the heavily loaded columns in the centrally located utility core. The columns around the core are turned to present their greatest depth parallel to the narrow direction of the building, to provide maximum stiffness and resistance to wind loads. The structure contains no shear walls.

Originally, the design called for a structural steel frame. However, a slow delivery schedule for steel forced the shift to concrete. But combination columns, with structural steel cores, had to be used in the lower stories to keep column sizes from getting too large.

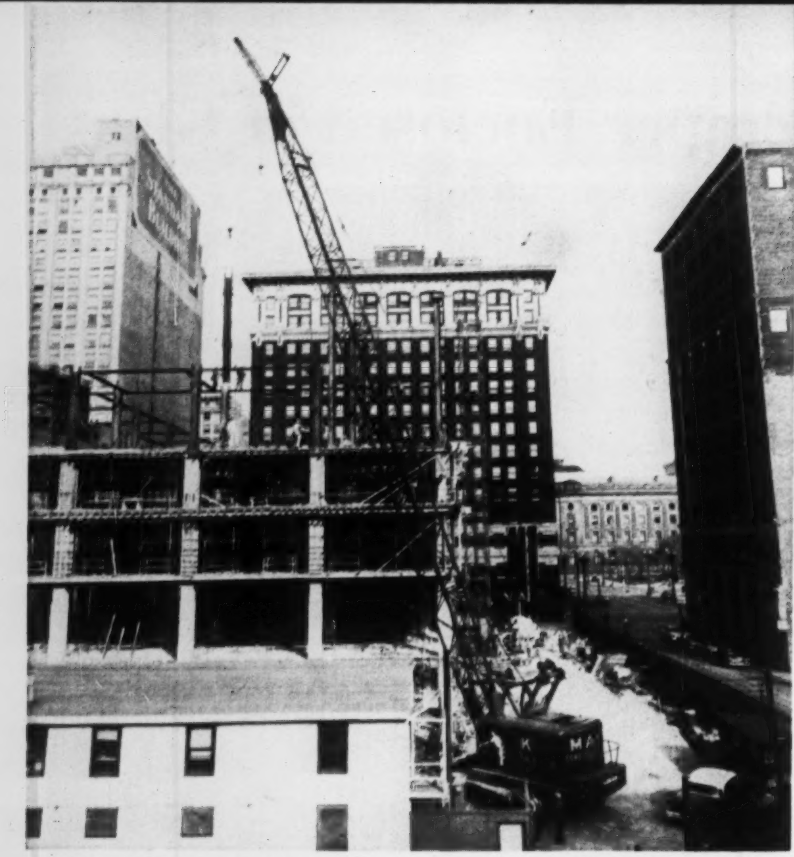
At the top of the combination columns, a transition is made to reinforced concrete. The steel core is milled on top and capped with a steel plate from 2½ to 4½ in. thick, with milled surfaces top and bottom. Vertical dowels are welded in a circle to the top of each plate. These correspond with and lap 20 diameters the reinforcing bars for the first tier of concrete columns.

• Designed for weak subsoil—At the bottom, the columns rest on a 52 in. thick reinforced concrete mat, continuous under the whole building and placed on top of a 4 in. mud mat. This foundation design was necessary because of poor subsoil conditions. Borings showed that the site was topped with about 10 ft of miscellaneous fill, with sand and clay below and the water table about 25 ft below grade. Rock is estimated to be about 200 ft down.

The sand and clay is figured to be good for 4,600 psf under a mat. So the foundation mat was placed on this layer, for the most part 23 ft below grade. Where the excavation terminated below the water table, it was kept dry with wellpoints.

But to keep the soil pressure within the allowable capacity, concrete for the mat as well as for floors and roof had to be made with a lightweight aggregate (expanded shale), weighing not more than 102 lb per cu ft. Also, the floors have a 76 lb per cu ft foamed-concrete fill atop the structural slab. In contrast, the columns are 3,750 psi stone concrete.

The floor system and foundations were designed for a 28 day strength of 3,000 psi. The lightweight concrete



COLUMN CORES, wide-flange steel sections, were erected in two-story lengths for the combination columns in the lower stories of the Illuminating Building.

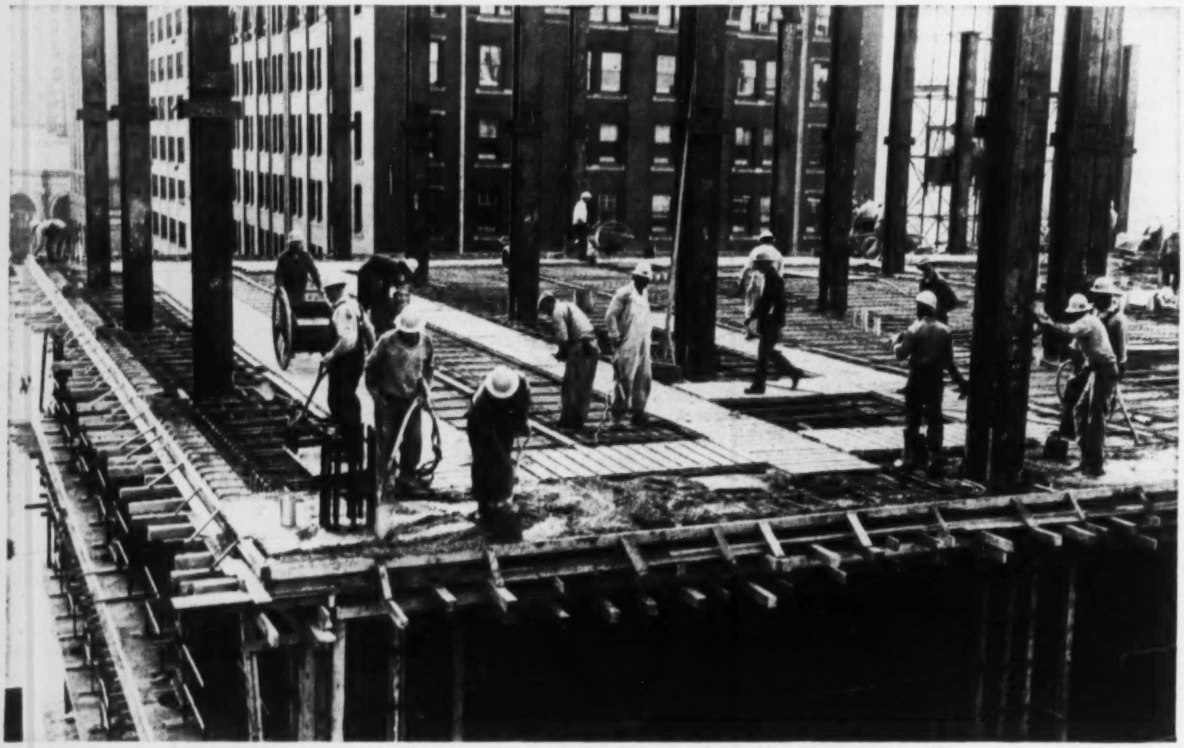
contains 6 bags of cement per cu yd, plus water-reducing and air-entraining admixtures.

Including the materials required for an adjoining, 104x114 ft, 7 story, open-type concrete ramp garage, this project required 26,000 cu yd of structural concrete, 3,000 tons of reinforcing and 800 tons of structural steel.

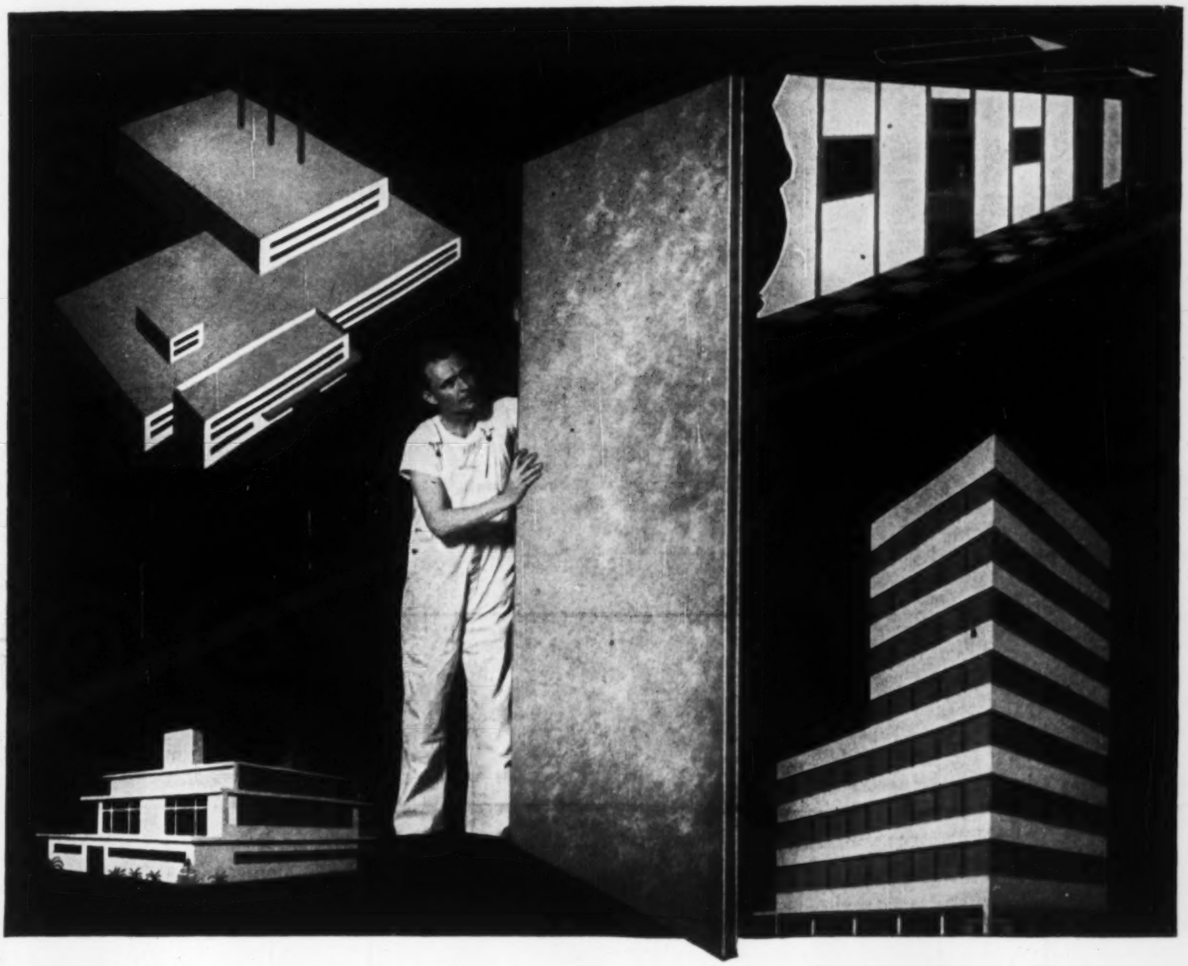
• Cranes erect steel cores—The steel column cores were delivered to the site in two-story lengths. For the lower levels, they were erected by a 35 ton wheeled crane equipped with 115 ft of boom and jib, and for the higher reaches, by a 60 ton crawler crane with a 140 ft boom and 20 ft jib.

Following right behind the steel erectors, the concrete subcontractor placed the floors at the rate of about one per week. The floors are metal-pan construction. Up to the 13th floor, 8 in. pans with tapered ends were used; above, 10 in. pans without taper. With a 2 in. thick top slab, total depth of joists thus was 10 and 12 in., respectively.

• How floors transmit loads—In general, wide, shallow concrete girders span between the columns. However, around the elevators deep beams had to be used. In all these beams and girders, stirrups were installed to take two-



CONCRETE FLOORS were constructed in 3 phase cycles—while one floor section was concreted, forms were erected for a second section and reinforcing set in a third. Metal-pan forms for the floors were supported on steel-pipe scaffolding.



Panelized walls for buildings–large and small

Johns-Manville TRANSITOP® panels are strong, weatherproof, save time and money

ARCHITECTS AND ENGINEERS are finding Transitop the ideal material for panel curtain walls in the design and construction of modern buildings. Exterior and interior walls erected with Transitop panels have great structural strength. They are quick and easy to install.

J-M Transitop panels have a highly effective insulating core impregnated to resist moisture and laminated for strength. This core is faced on both sides with strong, tough Asbestos Flexboard®. The insulating core and Asbestos Flexboard are bonded together with waterproof adhesive.

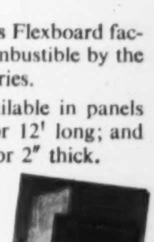
A Transitop 1 9/16-inch thick curtain wall has the equivalent insulation value of a 24-inch thick brick or masonry wall.

Because Transitop panels weigh only 4.7 lbs. per square foot, they reduce the dead load factor. This permits lighter framing and less expensive foundations. This means savings in labor and construction time. In fact, Transitop panels often pay their own costs as a result of the savings they make in total costs of the building.

Transitop panels have excellent wind load resistance, high moisture resistance and they provide maximum insulation value. Also, the Asbestos Flexboard facings are classed as incombustible by the Underwriters' Laboratories.

J-M Transitop is available in panels 4' wide by 8', 9', 10' or 12' long; and 11/16", 1 1/8", 1 9/16" or 2" thick.

Send for free copy of "J-M Asbestos Transitop." Write: Johns-Manville, Box 111, New York 16, N. Y. In Canada, write: 565 Lakeshore Road East, Port Credit, Ontario.



THE AMERICAN INSTITUTE OF ARCHITECTS 1857 1957

Johns-Manville congratulates the American Institute of Architects on its 100th Anniversary —Consult an Architect—use quality materials

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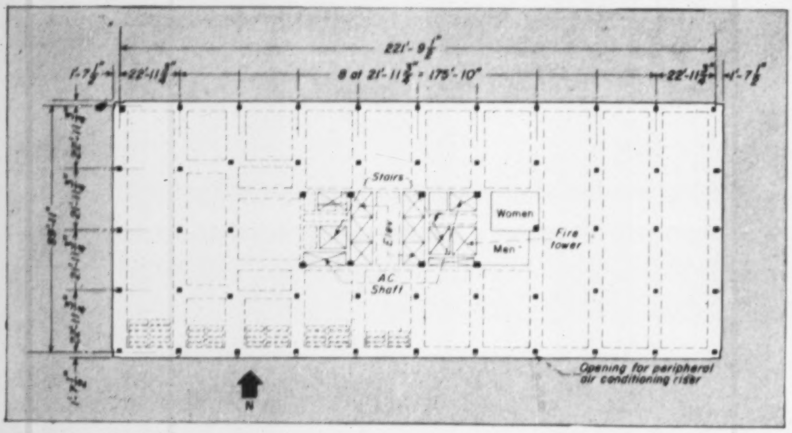
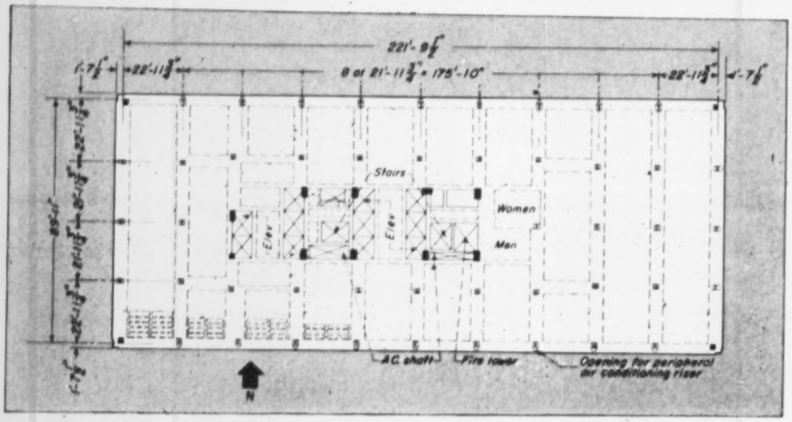
. . . Glass-enclosed skyscraper supported on combination columns


221'-9⅝"
1'-7⅝"
22'-11⅝"
8 at 21'-11⅞" = 175'-10"
22'-11⅝"
1'-7⅝"
Stairs
Elev
Women
Men
Fire tower
AC Shaft
Opening for peripheral air conditioning riser
N

UPPER FLOORS are carried by reinforced concrete columns, between which span wide, shallow concrete beams. Concrete joists span between the beams.


221'-9⅝"
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8 at 21'-11⅞" = 175'-10"
22'-11⅝"
1'-7⅝"
Stairs
Elev
Elev
Women
Men
AC shaft
Fire tower
Opening for peripheral air conditioning riser
N

LOWER FLOORS are supported mostly on combination columns, to save space. Concrete columns extend to foundations at building corners and utility core.

thirds of the shear from the ends to the inflection points. Under wind loads and alternate-span live loads, stirrups often were required for the full length of girders in the lower floors.

At the combination columns, the shear and bending moment are transferred from the wide girders to the steel cores through angle brackets attached to the steel-column flanges. The girder reinforcing perpendicular to the flanges are seated on and welded to these brackets. In the other direction, the bottom steel passes through holes in the column web, and the top steel is hooked 90 deg downward, the hook being welded to the column web. About 25% of the bars at the support run through or are anchored to the columns.

At the transition from combination to reinforced concrete columns, floor bars are welded to the core top plate.

Pan forms for the joists and slab were supported on metal-pipe scaffolding. Sides and soffits of girder forms, as well as column and spandrel forms, were made of plywood.

• Continuous concreting cycle—To raise ing levels, the contractor erected on building materials to the various work- hoist, one-half of which was used only the outside of the building a double for concrete. Passengers rode a separate hoist. In addition, a boom was installed on the double hoist to help in raising materials.

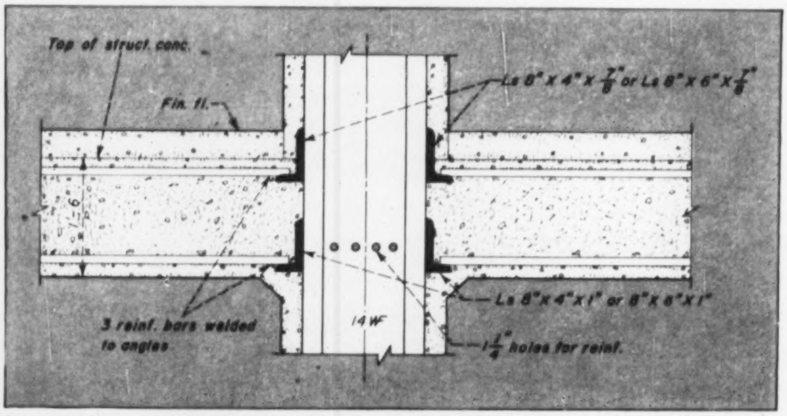
Truck-mixed concrete for floors and columns was hoisted in 35 cu ft buckets and dumped into a 45 cu ft hopper, from which it was fed to buggies. Men wheeled the buggies over wood platforms to the forms.

Floor construction was carried out in continuous cycles to meet the floor-per-week schedule. Each floor was divided into three sections of about equal size. While one section was concreted, formwork was constructed for a second section and pans and reinforcing steel placed in a third. Meanwhile, floors as far down as three below the casting level were reshored with pipe shores.

After the structural slab attained sufficient strength, underfloor ducts for electrical and telephone wiring were placed on it, if requested by tenants. Attached to the concrete with case-hardened studs driven by hammer with the aid of a hand tool (ENR July 12, 1956, p. 51), the ducts are cellular steel panels, 20 in. wide, 10 ft long and 1½ in. thick. Spaced 2 ft c-c, they were embedded in foamed-concrete fill, which later was topped with the finished flooring desired by the tenants.

• How the glass facade was installed—After the building reached the 10th floor, installation of the exterior walls began.

The outer rows of columns had been set back nearly 2 ft from the floor edges to obtain a continuous facade. So to transfer the wind loads from the glass walls to the floors and thus to the columns, steel I-beams were set vertically between floors on column lines. They were aligned with the aid of a transit and bolted at top and bottom


Top of struct. conc.
Fin. fl.
Ls 8" x 4" x ⅞" or Ls 8" x 6" x ⅞"
1'-6"
Ls 8" x 4" x 1" or 8" x 8" x 1"
3 reinf. bars welded to angles
14 WF
1¼" holes for reinf.

SHEAR TRANSFER between concrete beams and steel column core is accomplished through angles to which floor reinforcing bars are welded. In the transverse direction, top bars are welded to the column web and bottom bars are passed through holes in the web.

GUN fires stud into concrete floor for attaching mullion bracket.

ALUMINUM FRAME is attached to mullions to hold window and spandrel.

GLASS SPANDREL is set in a frame in the same way as windows.

to brackets anchored to the concrete slab.

Next, story-high aluminum mullions were attached between floors, including one at each vertical I-beam, dividing the bays into five parts. Brackets to which the mullions were bolted were anchored to the floor slabs with studs driven into the concrete with a powder-actuated tool. (This tool was also used for a wide variety of tasks on the project, in particular for fastening pipe and ceiling hangers to the concrete slabs.)

Story-high aluminum frames, ready to receive fixed windows and spandrels, were placed between the mullions. The windows are glazed with ¼ in. clear plate glass, 4 ft wide by about 7 ft high. Set in the frames in the same manner as the windows, the spandrels are 4x5 ft panels of gray-colored structural glass. Plans call for washing the inoperable windows from a platform suspended from the roof and riding on the mullions.

The spandrels are backed up with five courses of 4 in. thick concrete block made with expanded shale.

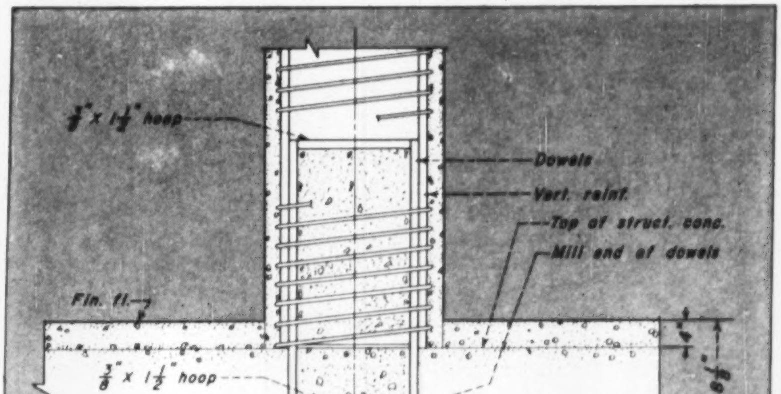
• Two-zone air conditioning system—The entire building will be air conditioned with a high-pressure conduit system for the perimeter zones and low-pressure single-duct distribution for interior spaces. Principal components of the system are two centrifugal compressors in the basement rated at 1,200 and 500 hp and capable of 2,000 tons of cooling. Additional equipment is installed in the penthouse.

Risers in the 2 ft space between the exterior columns and the walls carry chilled water and high-pressure air to under-window units on each floor. The bottom 11 stories are serviced by two primary air-handling units in the basement, and the upper stories, by two in the penthouse. These units, equipped with fans and cooling coils, will provide the perimeter zones with a total of 144,000 cfm of cooled air.

• Translighted ceilings—The interior-zone ducts will be placed above a suspended ceiling. In the Cleveland Electric Illuminating Co. areas, and perhaps in other portions of the buildings if the tenants desire, the ceilings will be translighted. Fluorescent lamps will be installed above translucent, 2x4 ft plastic panels on T supports hung from the underside of the floor slabs. Power will be distributed by a 480Y/277 v system.

Carson & Lundin, New York City, were the architects. McGeorge-Hargett & Associates, Cleveland, were the design engineers, with Prof. William S. Housel, University of Michigan, as soil mechanics consultant and Jaros, Baum & Bolles, New York City, mechanical engineering consultants.

George A. Fuller Co. is the general contractor, with Douglas A. Pyle as project manager and Elmer Behrns, superintendent. Pavarini Construction Co., New York City, was the concrete subcontractor. MAK Construction Co., Cleveland, erected the structural steel. The glass facade was installed by Universal Corp., Dallas, Tex.



TRANSITION from reinforced concrete column to combination column below calls for vertical dowels, welded to a steel cap plate, to transfer stress from column reinforcing bars to the lower member. Floor reinforcing is welded to the cap plate.

KING'S LAUNDRY
GARDEN BAR

Job: *remove 1,000,000 cobblestones plus 30,000 square feet of concrete*

Loading costs threaten profits until N.Y. firm buys this 2¾ yd Michigan

Due to extremely rigid job specifications and unusually tough material, Triboro Asphalt Company, Flushing, New York, faced a substantial loading problem in stripping 31 blocks of six-lane Third Avenue in Manhattan. Recognizing the advantages of a single machine with speed and power to keep costs from getting out of hand, they asked NYC distributor United Tractor & Equipment Corporation to demonstrate a 2¾ yd Michigan Tractor Shovel. When they saw, they bought!

Replaces big crawler

The 24 mph Michigan replaced a 3 yard crawler loader. "The crawler was too slow . . . too often blocking traffic . . . and it couldn't get big enough loads to maintain the desired production pace," according to Supt James Magnotta. Smaller crawlers, attempting to load heavy granite-slab cobblestones, tore out final drives and ended up in the shop. Two big rubber-tire loaders, which had a crack at the job, were sent back to the yard. "They didn't have either the power or the traction needed," said Supt Magnotta.

Does job in 27 days

So the Michigan, working alone, piled and truck-loaded *all the cobblestones*. Over a million of them were handled, according to engineers. Each measured about 8 x 12 inches, weighed about 15 lbs. Individual bucket loads averaged 250 blocks each . . . 3,750 lbs. *The entire job was done in 27 eight-hour days* . . . far faster than other stripping contractors doing the same kind of work with power shovels and crawler-loaders elsewhere along Third Avenue. "Far better too," adds Magnotta. "Our Michigan left the sub-base clean after only one pass. Sensitive controls let the operator

Six-inch concrete slab breaks quickly as Michigan applies its tremendous breakout action. Fast work by the Michigan made job much safer for maintenance of normal highway traffic.

keep just enough down-pressure on the bucket. All we had to do before laying asphalt was fill and level a few spots."

Breaks out concrete

After several days, the Michigan operator became so enthusiastic about the power of his machine, the street foreman tried to tame him down. He gave orders to break out and load some concrete pipe-vault roofs. Even this tough problem had a simple solution. By working bucket edge under the vault and using Michigan's terrific breakout, operator easily broke it loose. Concrete patches and driveway extensions, some 15 to 50 square feet, proved just as easy. "I put in some terrific days—running around the job like a pickup truck," says the operator, Fred Cerbone . . . "did a tremendous amount of work—yet I was *less tired* at the end of a day than on anything else I've operated in my *25 years* with Triboro."

How to cut costs

Triboro's Michigan did more than boost operator satisfaction. It helped cut many dollars of expense from the multi-thousand dollar paving project! As every contractor knows, bidding is extremely competitive on this kind of job; by handling loading and clean-up efficiently, the Michigan kept these expense items from eating profits.

With Clark torque converter, power-shift transmission, power steer, and planetary-wheel axles standard on all models, Michigans deliver more usable power, traction, and speed than any other machines of their type. If you're willing to be convinced Michigan is in a class by itself, do what Triboro did: *ask for a demonstration.* You name the job!

Single Michigan pass leaves sub-base clean, smooth, ready for repaving. Note how unobstructed bucket-arm design preserves dumping clearance.

Michigan is a registered trade-mark of

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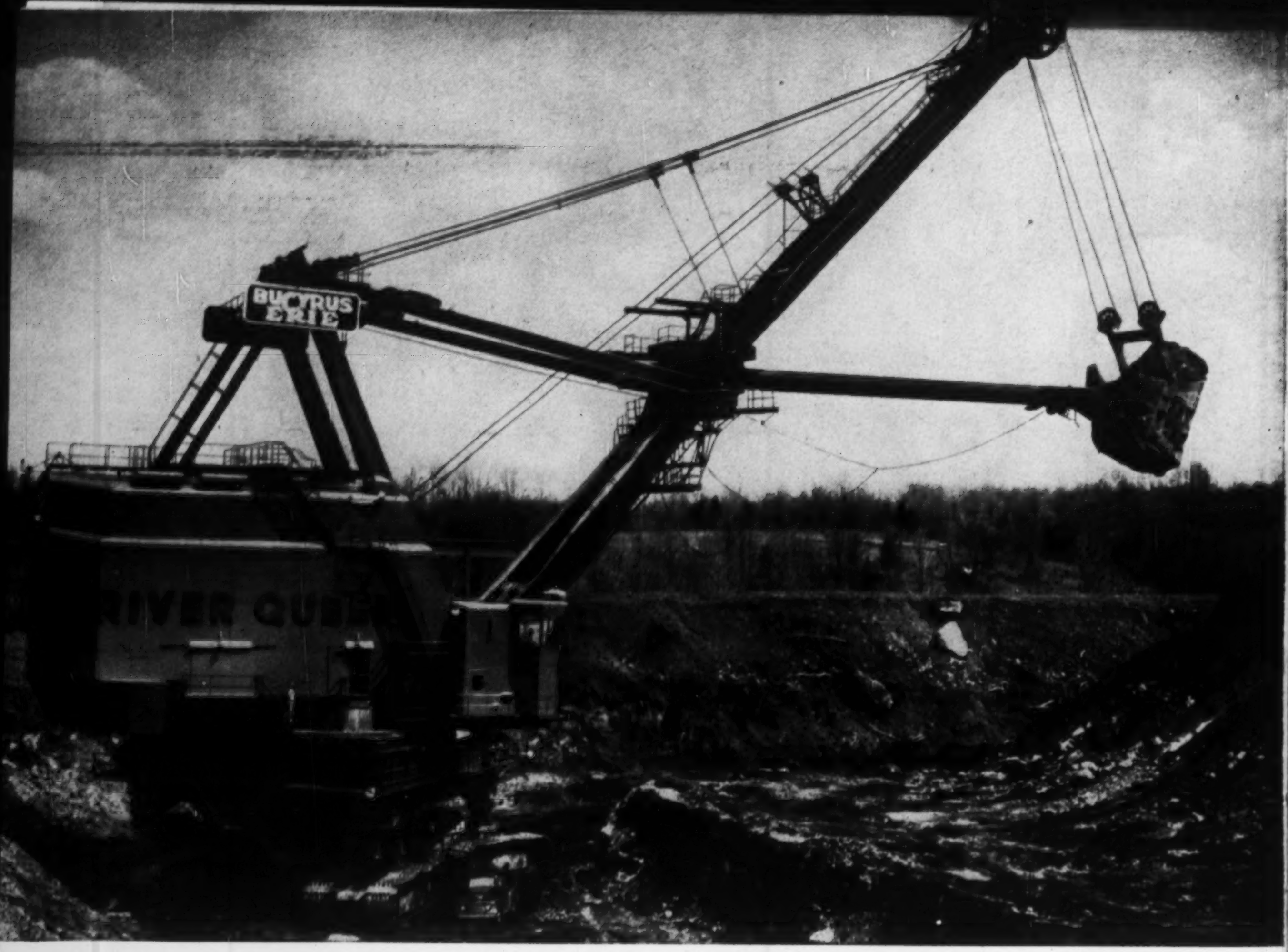


Delicate appetite for a "Queen"...

80 TONS IN ONE BITE!

But look at the size of her! Taller than a 13-story building, and weighing 2,400 tons, this lady is entitled to a queen-size appetite. She's the *River Queen*—largest power shovel ever built by the Bucyrus-Erie Company. And her huge, 80-ton-capacity bucket is made of tough USS "T-1" Steel to keep her eating regularly for a long time. Backed by 15 powerful motors and fronted by a formidable row of ripping teeth, the "Queen's" huge maw scoops up 55 cu. yds. of overburden at a gulp and dumps it nearly 300 feet away from the digging point. Digging and dumping in less than a minute, the *River Queen* could pile up a mountain of more than 100,000 tons of overburden in 24 hours!

This big shovel is being used to uncover two seams of coal for W. G. Duncan & Peabody Coal Companies in western Kentucky. When the mine is in full operation, its output is expected to be 2 million tons of coal annually. The "Queen" will be highly instrumental in making this possible.

With all the weight and mechanical muscle the big shovel possesses, her dipper has to be a real battering ram. That's why it's made of USS "T-1" constructional alloy steel. Biting and ramming through rock and earth, hour after hour, day after day, is punishing service. USS "T-1" Steel is designed to take this kind of impact, shock and abrasion. And its amazing toughness never falters, even at temperatures far below zero.

The very high yield strength of USS "T-1" Steel—90,000 psi minimum—saved tons of weight in the big dipper, making a bigger payload possible with each scoop. And, speaking of strength, the 86-foot dipper handle and the 145-foot boom are made of another U. S. Steel product, USS TRI-TEN high-strength low-alloy steel.

• • •

Perhaps you need a steel that offers high strength, extraordinary toughness, resistance to impact abrasion, or good creep rupture strength combined with ease of fabrication. USS "T-1" Steel is your answer, and we'll gladly help you adapt it to your particular application. United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

United States Steel Corporation, Pittsburgh · Columbia-Geneva Steel Division, San Francisco
Tennessee Coal & Iron Division, Fairfield, Ala.
United States Steel Supply Division, Warehouse Distributors, Coast-To-Coast
United States Steel Export Company, New York

USS "T-1" CONSTRUCTIONAL ALLOY STEEL

USS, "T-1," and TRI-TEN are registered trademarks.

USS UNITED STATES STEEL

Steel Measuring Tape Has Eighths and Tenths

An engineer's steel measuring tape is offered as a convenience to those who have to work with both tenths and eighths. The tape combines both scales on one side of the tape blade, enabling the user to make instant conversions from eighths to tenths merely by glancing at the blade. The blade is divided in half by a double line, with inch and eighth graduations along one edge and tenths and hundredths along the other.

The tape is available in both 50 ft and 100 ft lengths. The enameled blade, marked in black on a white background, is replaceable. A zinc plated steel case is sheathed in leatherette with an outer band of stainless steel. A gold personalizing kit is included with each tape.

The 50 ft tape is priced to retail at $6.49, the 100-ft at $8.98. Evans Rule Co., Elizabeth, N. J.

Pump Line Is Extended 50 Hp Units Are Added

With the addition of new high capacity 50 hp units to its line, the range of Sumo submersible pumps for water wells, now extends from ¼ to 50 hp. New 8 in. models are available to deliver up to 420 gpm against heads of 600 ft, according to the manufacturer. A new 10 in. line with pump diameter of 9⅛ in. in 15, 30 and 50 hp sizes are rated up to 650 gpm.

Stainless steel and bronze are used throughout in the pumps, which feature a close-coupled pump and motor arrangement. Sumo Pumps, Inc., 23 Brown House Rd, Stamford, Conn.

Lightweight Diamond Drill Can Take 6 in. Cores

A new diamond drill weighs only 37 lb, and can drill core or blast holes from ¾ in. to 6 in. in dia to 200 ft depths. Maximum 10 ft runs are practical with the use of an overhead drive principle.

Weight distribution and balanced movements in the gear case are said to result in a minimum of rod vibration to yield a maximum core recovery and diamond bit economy. Penetration speeds in excess of 1 fpm have been obtained at depths of 100 ft in medium hard limestones, according to the manufacturer.

Features include a water cooled gear box, safety clutch, built in water swivel and hardened helical gears. Aluminum construction is used in the drill and engine, which may be disassembled into three separate units for portability.

A 5 hp, 2 cycle gasoline engine with vacuum carburation permits all angle drilling; fuel consumption averages 1 qt per hr. Maximum bit speed is 1,830 rpm. A mechanical advantage lever for applying pressure may be used for hard rock drilling and deeper holes. A comparable drill which uses an air motor is also available. Wink Corp., 1518 N. 117 St., Milwaukee 13, Wis.

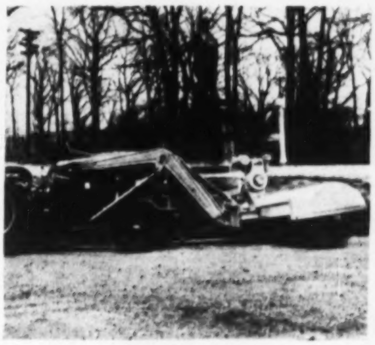
Quick Coupling System Uses Grooved Pipe End

A quick coupling system for thin wall steel and aluminum pipe and tubing is called Vic-Easy. Positive leak-tight connections are claimed through the use of couplings assembled on grooved pipe ends.

The couplings are available for thin wall pipe and tubing in sizes from 1¼ in. to 12 in., and may be used for working pressures up to 1,000 psi, depending on the wall thickness of the tubing and type of coupling used, according to the manufacturer.

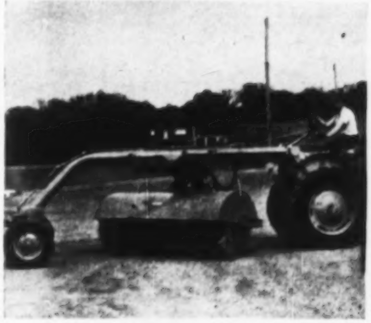
A joint is assembled by bringing the ends of the tubing into position and slipping a gasket, which comes with the coupling, onto one of the pipe ends. Gasket is then positioned over the joint of the pipe and the coupling fastened. The gaskets are of a standard compound resilient composition recom-

Three New Brooms For Clean Sweep



Little Giant's EL-C

M-B Sweeper



Lull Cyclone Broom

Three manufacturers have announced new self-propelled brooms for highway maintenance and snow removal work. Two of the machines are attachments for standard wheeled tractors, the third one is self-propelled.

The self-propelled machine was brought out by Lull Engineering Co. of 3045 Highway 13, St. Paul 11, Minn., which called its rig the Lull Cyclone Broom. The overhung engine propels the unit and provides power to the hydraulic system of both the broom and driving unit. The broom can be rotated in either direction so that the unit can sweep whether it is going forward or backward, thus eliminating turnaround.

One of the two attachment brooms is the Model EL-C, said to be mountable on the front of any tractor-mounted shovel, and made by Little Giant Products, Inc. of Peoria, Ill. The EL-C has a left-hand drive, to permit sweeping in gutter and near the curb. The arms of the end loader can be raised while the brush is rotating and speed rotation of the brush is constant and independent of the prime mover. The sweeper is available in brush lengths of 6 or 7 ft, with either Palmyra fiber or spring steel, and the brush can be turned end for end for even wear.

The other attachment sweeper is manufactured by the M-B Corp. of New Holstein, Wis., and also is designed to adapt loader-equipped tractors to sweeping jobs. The M-B unit permits two-way angling of the broom—providing an arc of from 30 deg to the right to 30 deg to the left. Swing arms keep the sweeping path centered ahead of the tractor. For traveling, the broom can be lifted up by the loader arms.

(*New Products continued on page 74*)

NEED A LOW-COST BUILDING FAST?

Steelcraft standard steel buildings can meet your needs faster and at less cost than any other type of construction. Predesigned rigid frame and truss type structures can be delivered very quickly. Structural members are mass produced to factory standards . . . pre-engineered for fast, low cost field assembly with a relatively small work crew. Your Steelcraft dealer, who provides complete construction service, can erect your building in a matter of *weeks* instead of months. You quickly and *profitably* get full use of your new facilities.

Steelcraft features give you more for your money!

- Select any width, height or length, with spans up to 80 feet . . . choice of wall and roof materials, doors, windows, skylights
- Easily, economically insulated to your requirements
- Effectively combined with other construction materials
- Provisions made for inexpensive future expansion

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describing building types, construction details, and applications

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mended to 180 F. Special compounds are also available for special services.

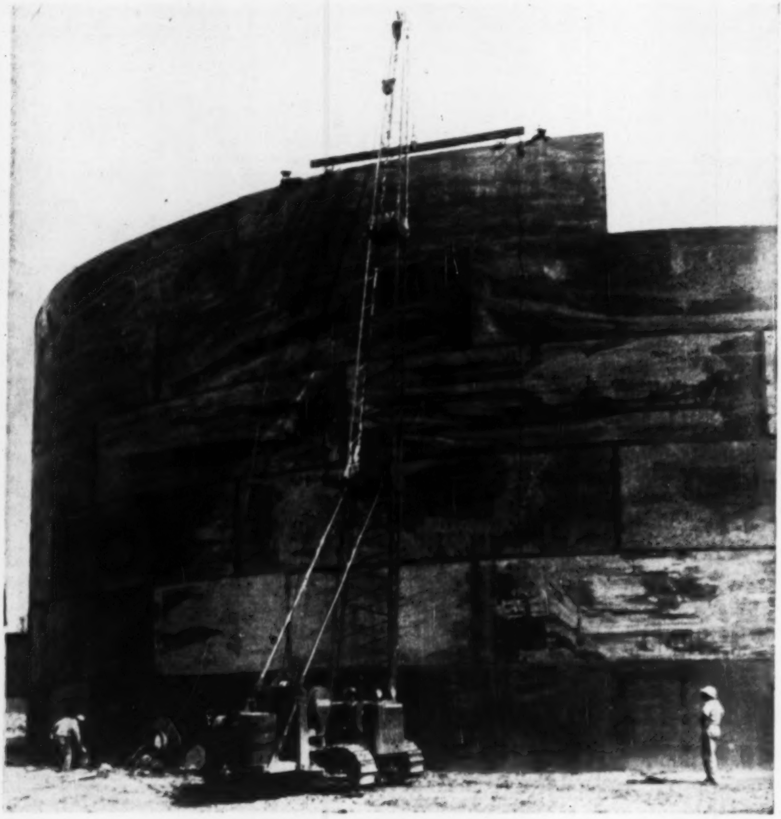
Among the advantages cited is the fact that the joint is flexible, allowing some deflection in any direction without leakage. Three types of couplings are offered: a snap joint coupling, which is a hinged assembly fastened by levers in tension and requires no tools; a lightweight coupling for use in low-pressure, low external stress applications; a heavy-duty coupling, designed for use where a high external stress or high internal pressures are expected. The last two types can be installed by use of a single wrench. Victaulic Co. of America, Elizabeth, N. J.

Chlorinator Can Handle 8,000 lb per 24 Hours

Wallace & Tiernan's Series A-721 V-notch chlorinator can meter and feed up to 8,000 lb of chlorine per 24 hr, according to the maker.

The new chlorinator is said to be adaptable to any type of chlorinator control, and the feed rate may be adjusted manually or controlled automatically on a flow proportional or selective rate basis.

The unit is constructed of plastic and is vacuum operated. Wallace & Tiernan, Inc., 25 Main St., Belleville 9, N. J.

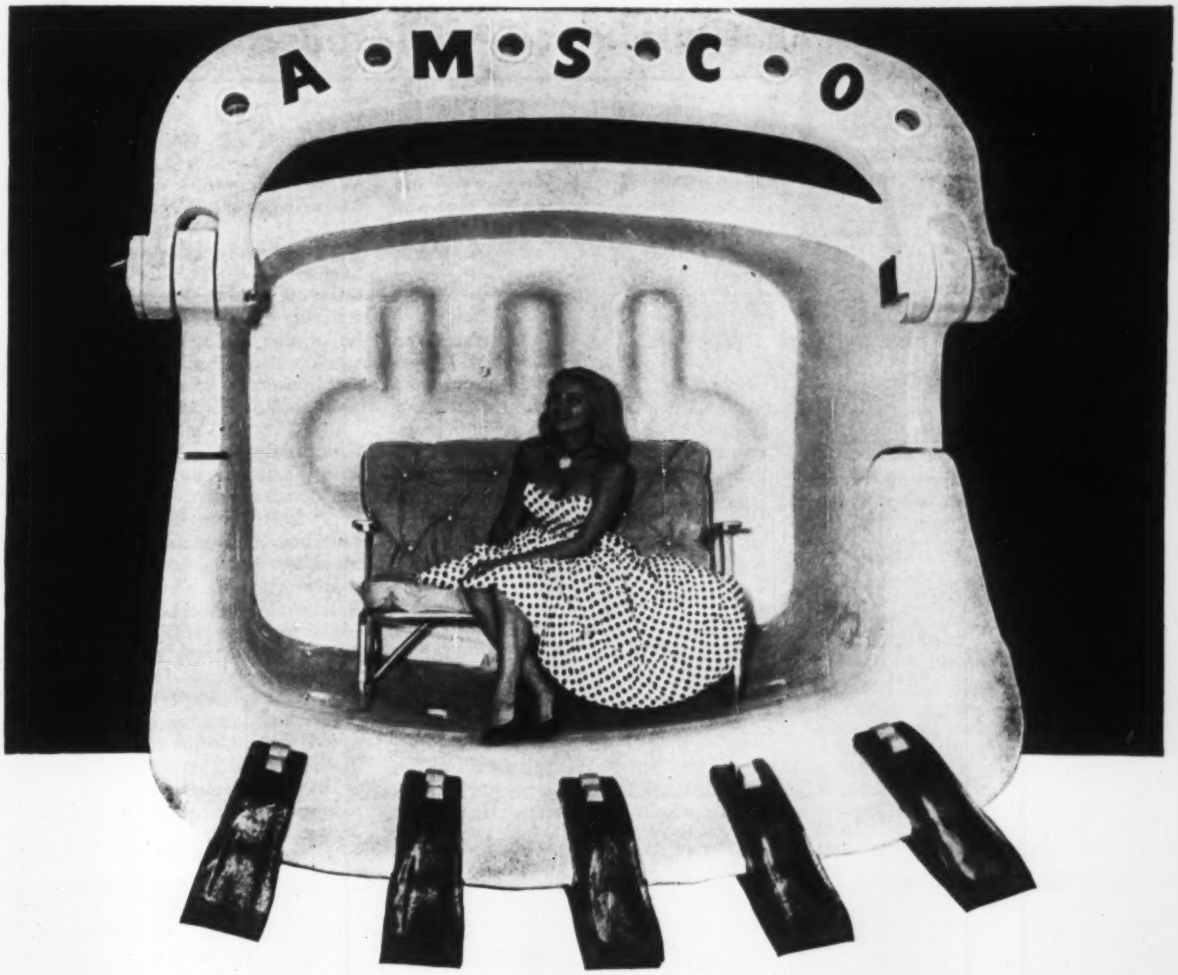


Crawler-Mounted Erector Does Many Jobs

A crawler-mounted erection boom, known as Model EB-142, provides, according to the manufacturer, a relatively low-cost unit capable of performing a wide range of jobs. It can be used for setting steel and many other lifting jobs where a crawler tractor is the most practical basic machine.

With 3,000 lb of counterweights, the model is said to be able to handle a 60 ft boom, in three sections, and can lift up to 14,000 lb with an overhang of 8 ft from rail.

Winch mounting permits raising or lowering the boom or load while the tractor is in motion and special hooks make it possible to drop the load instantly in the event that the tractor should start to overturn. Superior Equipment Co., Bucyrus, Ohio.



BEAUTY...OR BEAST?

We'd be the last to claim that Amsco® Dippers have any inherent glamour. That's why we induced the pert 115-pound* blond to pose in one of our 7-yd. dippers at a recent trade show. Got a lot of attention, too!

But we know that experienced operators *specify* these all-cast Manganese Steel Dippers because they're real "beasts"—when it comes to strength and ruggedness. By way of proof, glance at the other photo. It shows a 9-yd. Amsco Dipper hoisting a 60 to 70-ton* rock out of the St. Lawrence Seaway Channel. There's plenty more proof available, too—on the extra strength, digging ability and long life of Amsco Dippers. That's why they're the number one original-equipment choice on most leading makes of power shovels!

Consult your equipment manufacturer, or write us direct for new booklet on *Amsco Power Shovel Equipment*, giving detailed reasons why Amsco Dippers are real "beasts" when it comes to rugged digging work.

*Estimated

AMERICAN
Brake Shoe
COMPANY

AMSCO

American Manganese Steel Division • Chicago Heights, Ill.

OTHER PLANTS IN: DENVER, LOS ANGELES, NEW CASTLE, DEL., OAKLAND, CAL., ST. LOUIS, JOLIETTE, QUEBEC

Why IRONITE® Waterproofing will solve your most difficult water leakage problem

"Ironite" Waterproofing is an extremely fine iron powder which can be mixed with water and applied with a brush. The iron particles are carried in suspension and thus work their way *immediately* into any and all cavities in concrete, brick, stone and other porous masonry building materials. This makes it possible to "flow it" into the most inaccessible spots.

Bulletin No. 701 tells how and why Ironite Waterproofing is used and explains how the iron particles thus oxidize and expand with such force as to form an INDESTRUCTIBLE UNION with the porous surfaces. This *structural integration* results in a continuous structural mass from which the water resistant compound cannot be separated. It can be successfully applied to the Inside Surface of below grade masonry!

Water, moisture and dampness problems involved in foundations, basements, catch basins, boiler pits, concrete bridges, swimming pools, tunnels, molasses tanks, hot water tanks, sewage disposal plants, etc. are easily solved. Leading architects, contractors and engineers have specified Ironite Waterproofing for 50 years:

. . . Because it is a metallic water resistant compound.

. . . Because it is not merely an outer coating.

. . . Because it cannot scale, blister, crack or peal.

. . . Because removal is impossible without the destruction of the underlying surface.

. . . Because IRONITE Waterproofing has proved its ability to stand up indefinitely in some of the world's most famous buidings.

For further information write for Bulletin No. 701, IRONITE COMPANY, 208 South LaSalle Street, Chicago 4, Ill.

IRONITE COMPANY

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Publications

Crane-excavator—A 6 page bulletin covers the Bantam Model T-35 crane-excavator, showing application and engineering data on the company's 7 and 8 ton carrier-mounted machines, as well as brief specifications and illustrations. SCHIELD BANTAM CO., 999 PARK ST., WAVERLY, IOWA.

Air fan data file—A 24 page air engineering data file covers engineering and test facilities for propeller fans, specifications, construction, maintenance and installation. Tables are included for estimating air-handling requirements, entrance and elbow losses and duct sizes. Specifications for special-application equipment, such as coatings and motors, special propellers, corrosion-resistance and temperature guides and physical fan laws are also given. AEROVENT FAN CO., INC., PIQUA 23, OHIO.

Electrical boxes and cabinets—Cast metal junction and pull boxes, conduit boxes, hinged cabinets and explosion-proof housings are included in a 24 page catalog of electrical boxes and cabinets. Sizes and styles also are listed. One section is devoted to an explanation of the specifications and requirements of electrical enclosures. CATALOG 10, SPRING CITY ELECTRICAL MANUFACTURING CO., SPRING CITY 48, PA.

Fluorescent lamp ballasts—The complete line of GE fluorescent lamp ballasts are covered in a 16 page catalog and selection guide that also contains a listing of obsoleted ballasts and suggested replacements for each units. The catalog also has list prices, data on ballast lead lengths, cross section dimensions, table on lead stripping and tinning, wiring diagrams and electrical specifications. CATALOG GEC-983K, GENERAL ELECTRIC CO., SCHENECTADY 5, N. Y.

Bulldozers—Eight pages of photographs and operational drawings show how the new "Tilt-Crown" bulldozers can be tipped and tilted hydraulically from the operator's seat for ditching, road crowning, grubbing and other work. Advantages of torque converter drive and counter-rotating hydraulic transmission are shown. The bulletin includes charts comparing features and performance of the TerraTrac 80 and 100 hp bulldozers with competitive makes. J. I. CASE CO., RACINE, WIS.

Crushing plant—Now ready for distribution is a brochure on one of the Lippman Engineering Works latest developments, the "Mohawk", a new portable primary crushing plant with a range of four sizes, the Cub, Scout, Warrior and Chief. LIPPMANN ENGINEERING WORKS, INC., 4603 W. MITCHELL ST., MILWAUKEE 14, WIS.

Tractor-shovels—The complete line of five models of four-wheel and two-wheel drive tractor-shovels made by The Tractomotive Corp. is covered in a 16 page bulletin. The bulletin gives complete specifications on all models and detailed descriptions of operating characteristics. TRACTOMOTIVE CORP., DEERFIELD, ILL.

Chlorination—A 12 page booklet deals with the handling of chlorine liquid and gas from container to dispenser. Pertinent facts about chlorine, safety precautions, and recommended practices for designing and constructing chlorine supply systems are included. Technical Bulletin WWC3B4. Fischer & Porter Co., 230 Jacksonville Rd., Hatboro, Pa.

Forms and clamps—The Symons line of forms, clamps, hardware and other accessories is presented in a 28 page illustrated general catalog, F-12. Included in the annual catalog are explanations of the firm's engineering service and pictures and descriptions of some jobs on which the products have been used. SYMONS CLAMP & MFG. CO., 4249 W. DIVERSEY AVE., CHICAGO 39.

Prestressed concrete tanks—An 8 page bulletin, T-19, on the design of prestressed concrete tanks, gives engineering data and formulas of general interest. THE PRELOAD CO., INC., 211 E. 37 ST., NEW YORK 16.

Pumps—A model selector chart is designed to help different users pick the right pump for the right job. Data Sheet No. 349. Barnes Mfg. Co., Mansfield, Ohio.

Scaffolding equipment—Catalog No. 125, listing the company's complete line of scaffolding hardware, is available from SUPERIOR SCAFFOLD CO., 5624 BANKFIELD AVE., CULVER CITY, CALIF.

Groundwater film—A color and sound 16 mm motion picture film portrays how water reaches underground formations, how water is located and the processes necessary for its production in ample quantities. The 22 min. film shows drilling rigs in action, setting and cementing, casing, setting and graveling screen and test pumping the well. Available for showing without cost. LAYNE & BOWLER, INC., MEMPHIS 8, TENN.

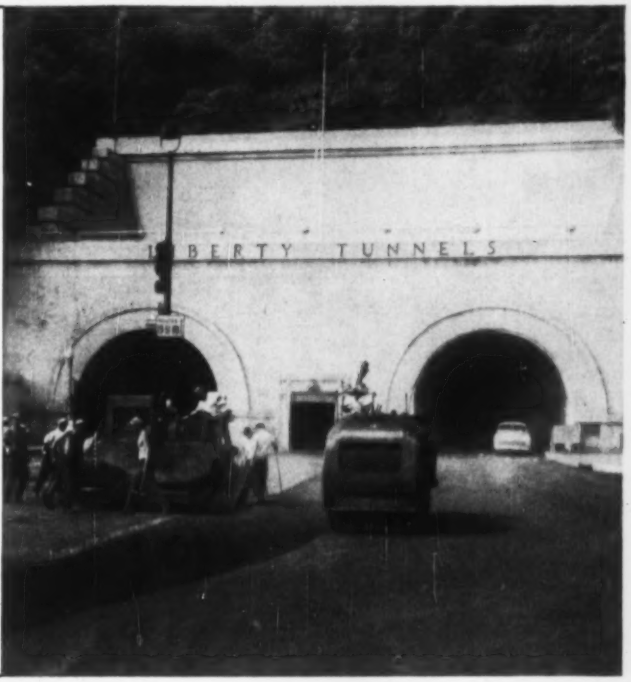
(Publications continued on page 78)

Nationwide service on Bitumuls & Asphalt for every paving need...all from one source!

PENNSYLVANIA: Laykold® Asphaltic Concrete solves a tough paving problem on the Liberty Bridge, a major approach to downtown Pittsburgh. (When it comes to pavements, bridges are notoriously "bad actors" because expansion and contraction of the deck result in an unusual degree of movement under the surfacing). Based on previous use of Laykold Asphaltic Concrete, Department of Public Work officials for Allegheny County knew that this material retained an extra measure of resilience after placement and compaction, with no decrease in load-bearing value.

Mixed with slag aggregate, a 120 lb. "LAC" binder course and a 100 lb. "LAC" surface course were placed over an area of some 32,000 sq. yds. Trumbull Construction & Asphalt Company of Pittsburgh did the work. American Bitumuls & Asphalt Company supplied the asphalt and the Laykold Tempering Fluid.

Results to date: excellent service; no pavement failures.



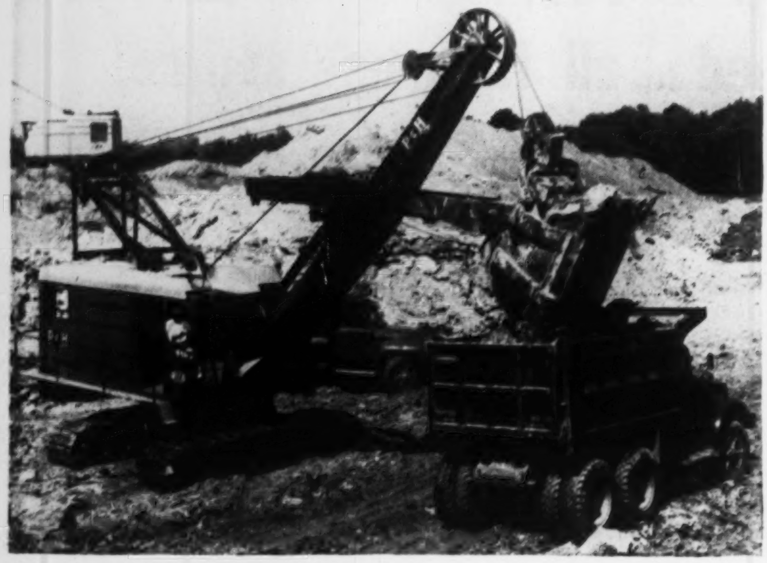
CALIFORNIA: Across the nation, on the Pacific Coast, the State of California Department of Highways let a half-million-dollar contract for re-surfacing 41 miles of U. S. Highway 99 to the Schroeder Company, of Sun Valley, California. For this job, American Bitumuls & Asphalt Company supplied: 1,700 tons of Air Refined Asphalt; 3,500 tons of Paving Asphalt; 140,000 gallons of Bitumuls® Emulsified Asphalt.

LOUISIANA: While "down South," on the construction of a road for private industry at Grand Isle, La., American Bitumuls & Asphalt Company supplied Bitumuls Emulsified Asphalt for 20,000 sq. yds. of 3-course surface treatment work on which *clam shells* were used as aggregate. As cover aggregate, shell produces a long-wearing surface.

Whenever . . . and wherever . . . your paving job calls for asphalt or asphaltic products, call our office nearest you. *That's your single source for all your asphalt requirements.*

American Bitumuls & Asphalt Company

200 Bush St., San Francisco 20, Calif. Perth Amboy, N. J.
Baltimore 3, Md. St. Louis 17, Mo. Cincinnati 38, Ohio
Mobile, Ala. San Juan 23, P. R. Tucson, Ariz.
Inglewood, Calif. Oakland 1, Calif. Portland 7, Ore.

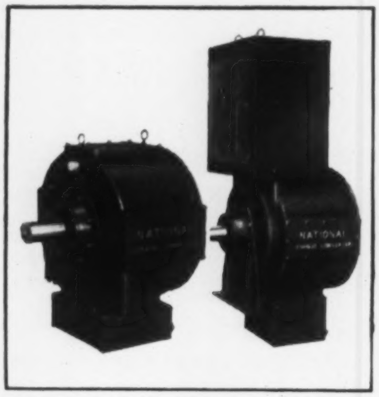


This Harnischfeger Shovel operates faster, smoother, easier, because of a National Torque Converter

If you've ever watched a shovel like this in action, you know how the operator makes it swing, travel and hoist all at the same time, starting and stopping each operation at will. And, if you stop and think, you'll recognize what a strain this rapidly varying load puts on the engine.

On the shovels produced by most of the nation's leading manufacturers, a National Torque Converter is installed to cushion this stress. All shocks are absorbed within the converter, which eases the wear on the equipment. Furthermore, the converter automatically delivers the power as needed for various operations. If a shovel hits a boulder, for instance, the converter reduces the bucket speed, and multiplies the "crowd," until the obstruction is cleared. The engine can't stall, as the converter exerts its greatest thrust when it encounters the greatest opposition!

The properties of torque multiplication and shock cushioning that make National Torque Converters so valuable to shovel operators may also serve you. If you have any heavy equipment, powered by 100 to 1000 hp prime movers, that is subject to shock, strain and varying loads, the National Torque Converter can help you to increase output, reduce maintenance. Write:



National Torque Converters are manufactured with or without integral cooling systems.

THE NATIONAL SUPPLY COMPANY

INDUSTRIAL PRODUCTS DIVISION

Two Gateway Center, Pittsburgh 22, Pa.

Pace-setters in the progress of industrial power transmission

Transit mix—A new bulletin describes the full line of products and gives complete specifications and details of ready-mix components. Construction Machinery Co., Waterloo, Iowa.

Masonry cutter—A complete description of the "Speedy" masonry cutters said to be easily portable, deliver full power, and greatly increase production are covered in a new bulletin. Rice Pump & Machine Co., Belgium, Wis.

Safety—Three pocket-size safety manuals have been published by the Industrial Safety Div. of the Association of Casualty and Surety Companies. Each deals with a specific job operation or hazard, shows the dangers, and presents safe practices and methods for avoiding or lessing the hazards. Two of the booklets—one on welding and one on blasting operations—are intended for use by workmen; the third deals with electricity. Association of Casualty and Surety Companies, 60 John St., New York 38, N. Y.

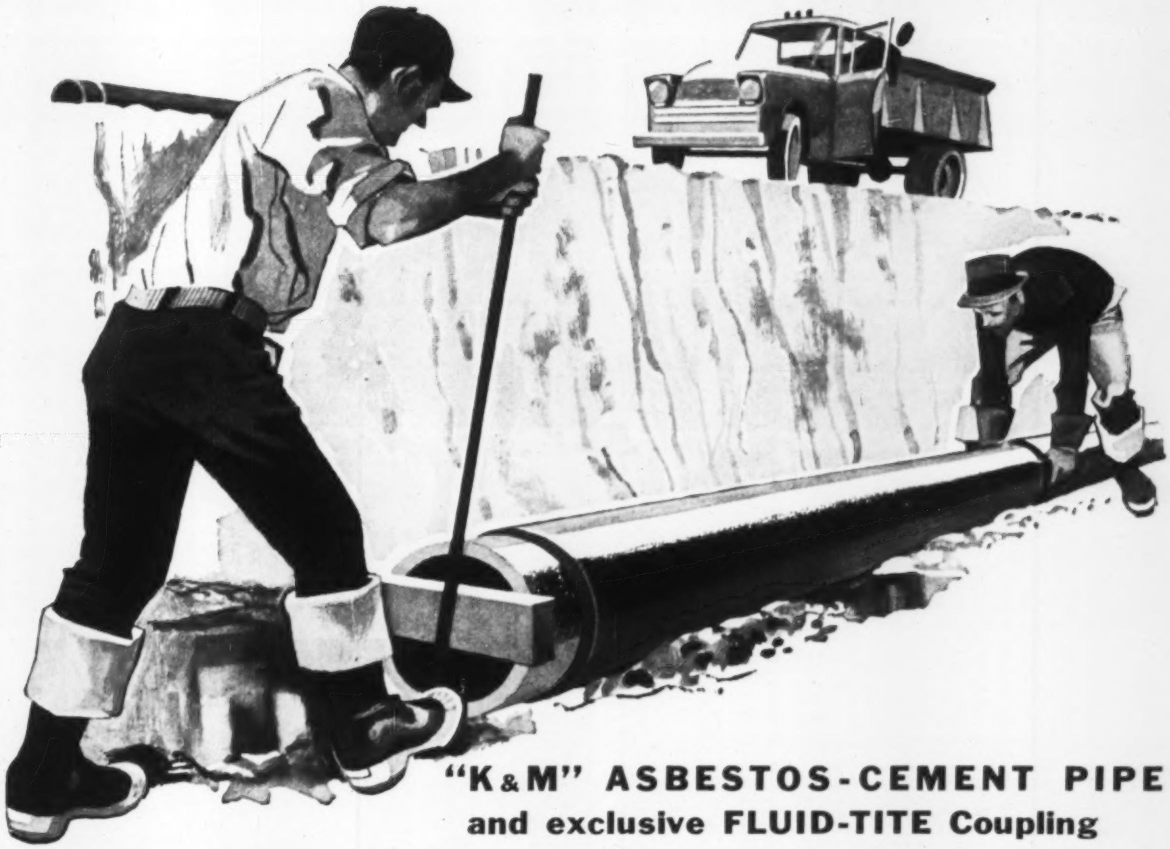
Platform trailers—New literature describing and giving specifications on the transport trailer line of heavy-duty platform trailers are now available. The company's Model PX platform semitrailers are used extensively on and off highway hauling of materials and equipment and are available in standard lengths. Transport Trailers, Inc., 1200-34 Twelfth St., S.W., Cedar Rapids, Iowa.

Gradall—A new Gradall Manual, conveniently subdivided for models and attachments; excavating and trenching; finishing and grading, and other uses of this versatile machine is now available. Grandall Div. of the Warner & Swasey Co., 5701 Carnegie Ave., Cleveland, Ohio.

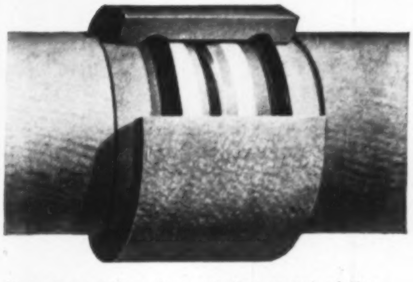
Hose and belting—A new 8 page catalog describes and illustrates 26 types of Acme hose and types of conveyor belting, along with details on application, composition and lengths and sizes available. Also given are complete tabular listings of diameters, working pressures, weights and piles. Acme Rubber Mfg. Co., Div., Acme-Hamilton Mfg. Corp., Trenton 3, N. J.

Tractor-shovel—Yale & Towne Mfg. Co. has issued a 6 page brochure on its 2 cu yd Model 154 Trojan tractor shovel. Included are drawings and descriptions of the machine's operating benefits; specifications and lists of standard and optional equipment. Yale & Towne Mfg. Co., Chrysler Bldg., New York 17, N. Y.

THE MODERN PIPE JOINS TIGHT IN RAIN OR SHINE



"K&M" ASBESTOS-CEMENT PIPE and exclusive FLUID-TITE Coupling



Exclusive sealing rings are the secret of the "K&M" FLUID-TITE Coupling installed with "K&M" Asbestos Pipe. All "K&M" couplings and pipe are hydrostatic pressure-tested to 3½ times the rated operating pressure!

No need to wait for dry skies or a dry trench before installing "K&M" Asbestos-Cement Pipe. Wherever water is to be piped under pressure, "K&M" Pipe is the modern answer. The exclusive FLUID-TITE® Coupling makes installation quick, easy—and permanent.

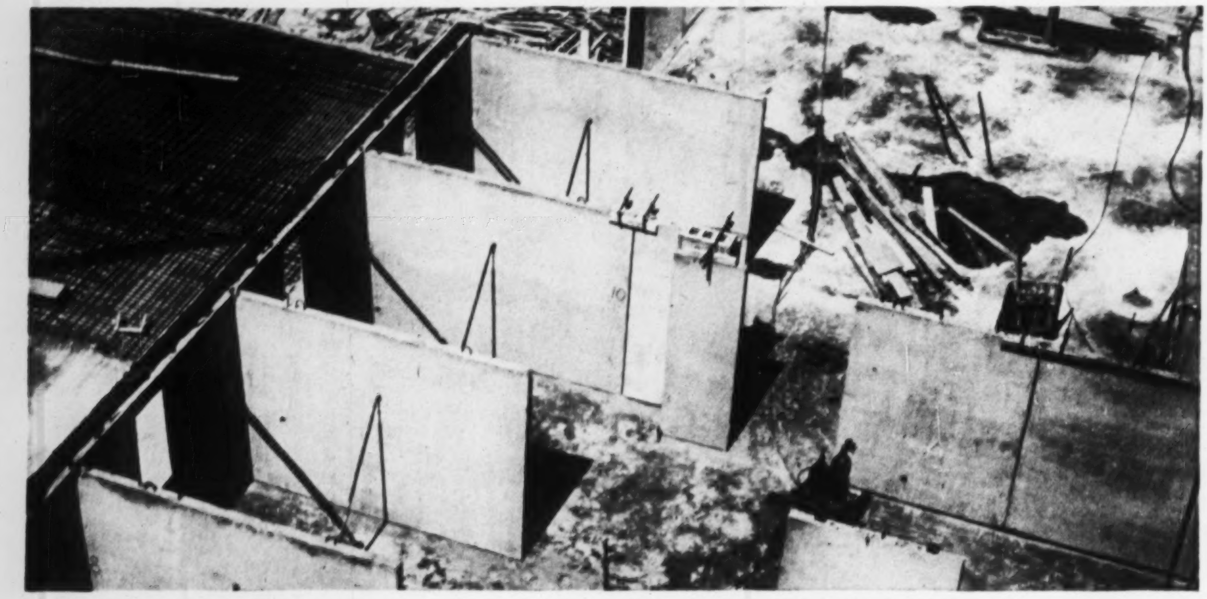
No special equipment; little skill needed. Just two easy steps: 1. Lubricate rubber rings; 2. Slide pipe into coupling. It is watertight immediately. The FLUID-TITE Coupling allows deflection up to 5° at each joint. Installation and maintenance costs go down when you specify the *modern* pipe and coupling . . . "K&M."

Meets specifications. "K&M" Pressure Pipe meets A.W.W.A., A.S.T.M., and U.S. Federal Specifications, and has Underwriters' Laboratories approval for all sizes (pipe and couplings) in Class 150.

Learn the advantages of the *modern* pipe from the K&M distributor. Or write to us for complete information, including a Flow Chart for "K&M" Pipe based on the Williams and Hazen formula.

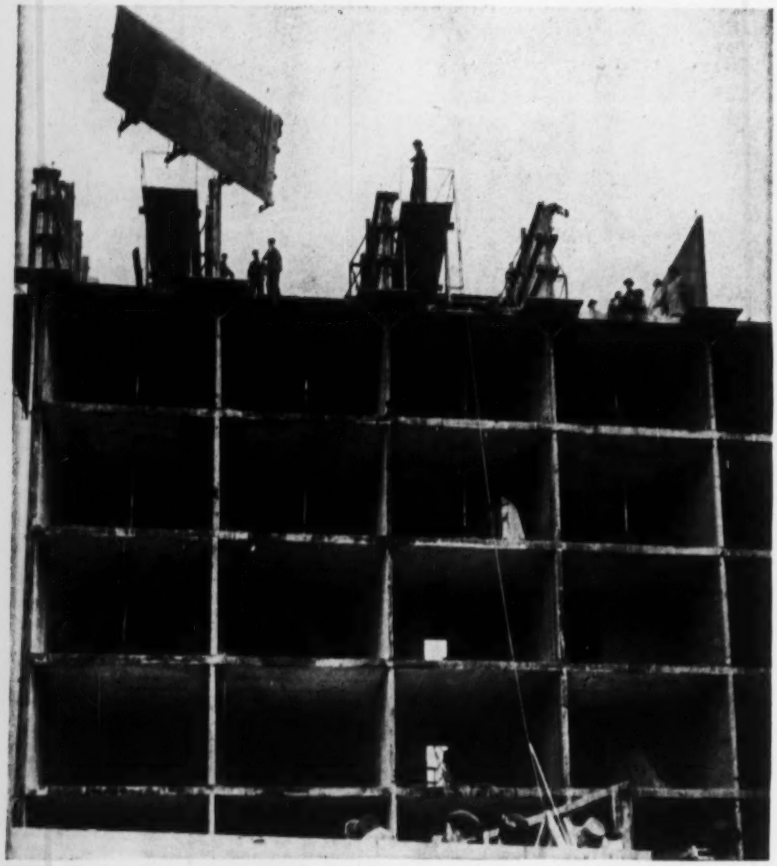
KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

K·M
BEST IN ASBESTOS



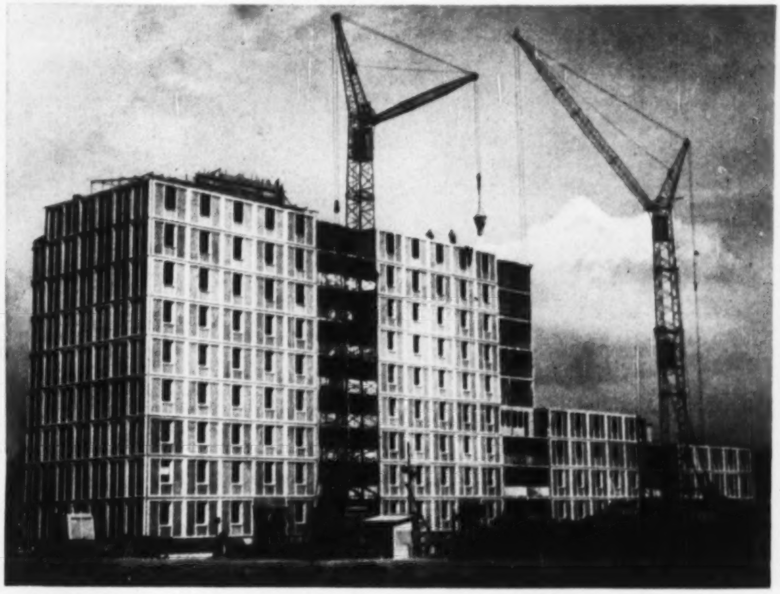
ONE SYSTEM, used for multistory apartment houses in Sweden by Hans-Ancker Holst, architect, calls for story-high precast walls to support cast-in-place floors.

Swedes Build



SECOND SYSTEM, called Allbetong, supports room-size precast floor slabs on story-high precast walls. All units are fabricated on the site.

ALLBETONG PROJECT at Vaxjo even has precast balconies . . .

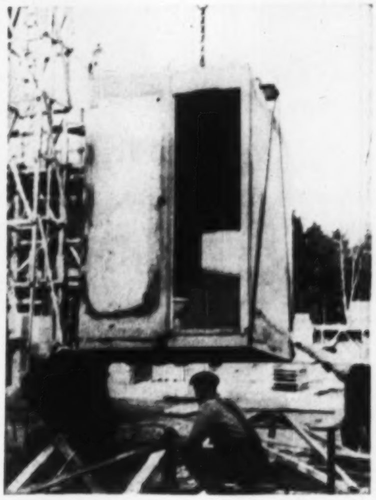


APARTMENT HOUSE at Lorensberg, Malmo, is enclosed with story-high concrete sandwich panels, with glass-fiber core. The system is being used for buildings up to 16 stories.

Precast Apartment Houses

Extensive use is being made of precast concrete in Sweden for multistory apartment houses. By developing this technique to a high level and mechanizing operations as much as experience shows is economically feasible, the Swedes overcome the handicaps to building construction of long, severe winters and shortages of skilled labor, especially bricklayers. On many projects, they find on-site mass production of concrete components advantageous.

About two-thirds of all new housing in Sweden is multifamily, and there is a distinct trend toward "district" housing of several thousand units. So assembly-line production of prefabricated components pays off. On some



. . . Prefab bathroom is positioned by a crane straddling the building.

WALL SLABS for a project in Vasteras are precast in the building basement.

Plant Trenches

NEED CLEAN, DRY COVERS

TRENCHES in floors of industrial plants often house subsurface pipes, valves, etc. Often these trenches are covered with cast iron plates or wooden boards which collect grease, oil or water, making unsafe floor areas.

Trench covers of 75% open Irving metal grating remain safe because they will not collect these substances. In addition to providing drainage and traction, grating sections can be easily removed for access to trenches.

★

Manufacturers of Riveted, Pressure-Locked and Welded Gratings in Steel, Aluminum and other metals for over 50 years.

"A Fitting Grating for Every Purpose"

IRVICO®

IRVING SUBWAY GRATING CO., Inc.

Originators of the Grating Industry

Offices and Plants at
5063 27th St., LONG ISLAND CITY 1, N. Y.
1863 10th St., OAKLAND 23, CALIFORNIA

projects, complete kitchens and bathrooms, including their walls, are prefabricated.

Generally speaking, the multistory apartment houses are of bearing-wall construction.

Concrete Replaces Twine for African Bridges

The swaying, graceful twine bridges of Liberia—aptly nicknamed "monkey" bridges—are giving way to the less picturesque but more utilitarian structures of reinforced concrete. Of some 29 concrete bridges contracted for, 10 have been completed already, two are under way and work will start soon on the others.

The entire bridge building program is budgeted at $1.27 million. Approximately $100,000 of this sum is being appropriated by the Liberian government and the remainder is from an Export-Import Bank loan.

Actual work for the bridge building and for the highway program is being done by private contractors. The United States is helping through the International Cooperation Administration's technical cooperation program by supplying a team of highway engineers to work with the Liberian government in supervising construction.

A peculiarity of concrete bridges in Liberia and West Africa are the large wing walls of the abutments, designed to protect the approaches from washouts during heavy rains.

(*International continued on page 87*)

Do You Have This PIPE PROTECTION PROBLEM?

Underground piping must be protected against destructive forces of corrosive soils and electrolytic conditions. Normally, coal tar coating as called for in AWWA specifications C-203 and C-204 would be hot-applied at a coating mill. However, there are times when the volume of pipe involved or the distance of a coating mill make this impractical from a time and cost standpoint.

You'll find the ANSWER with TAPECOAT® . . . the Quality Coal Tar Coating in Tape Form

TAPECOAT is the widely-accepted alternate material that is equivalent to mill-applied hot coal tar protection. With this easy-to-use material, protection can be applied in the field by your own men, because technical know-how, kettles and special crews are not required. You save time and money while providing the long-life protection called for.

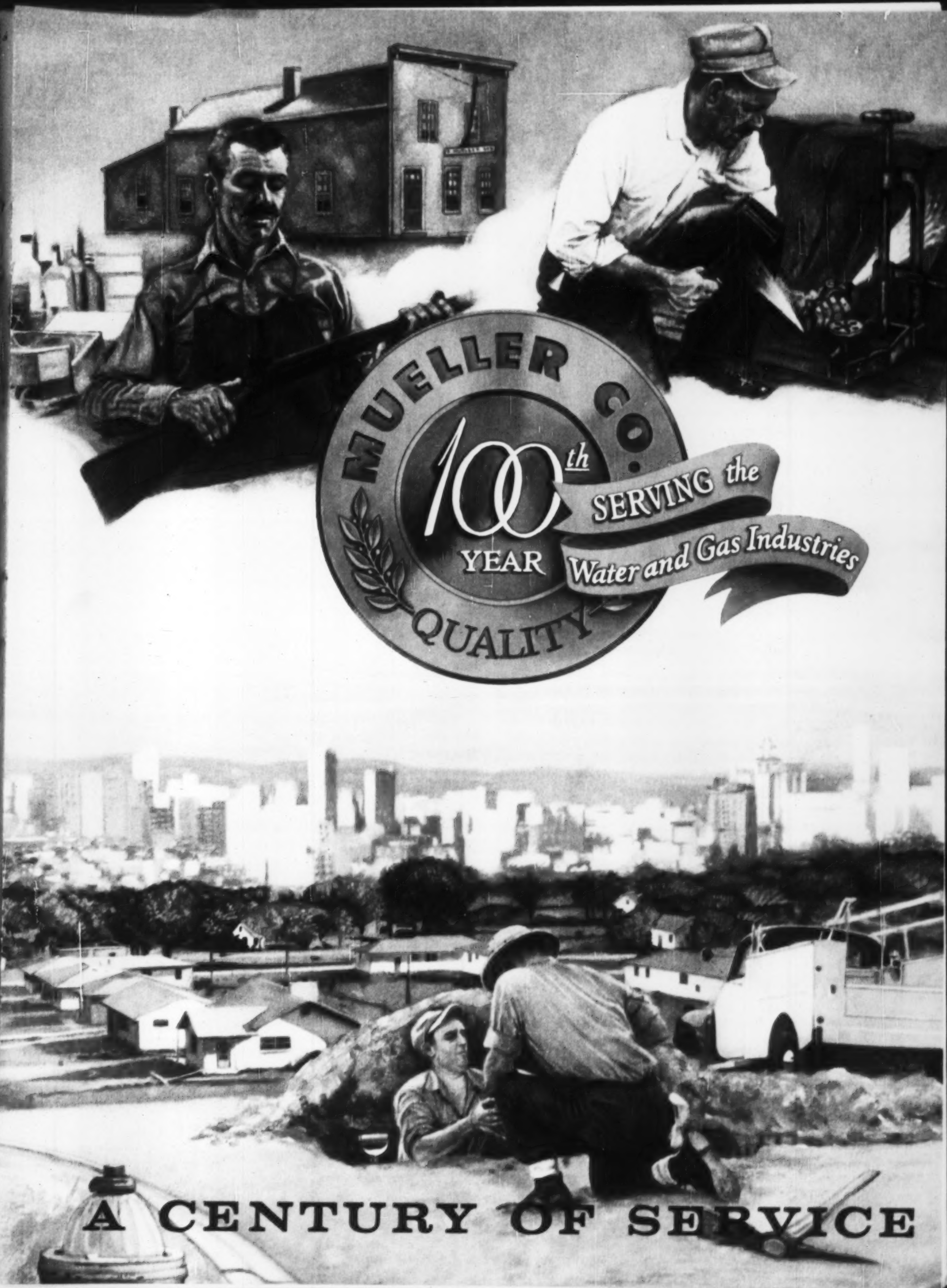
TAPECOAT is easily applied, using a torch to soften or bleed the pitch which gives both bond and protection. Available in widths from 2" to 24", it is spirally wrapped or cigarette wrapped around pipe, pipe joints, couplings, conduit, cable, and insulated piping.

Write for illustrated brochure.

The TAPECOAT® *Company*

Originators of Coal Tar Coating in Tape Form

1551 Lyons Street
Evanston, Illinois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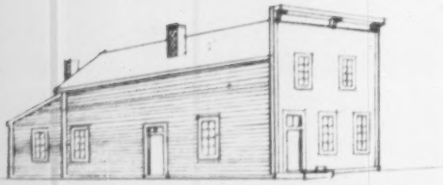
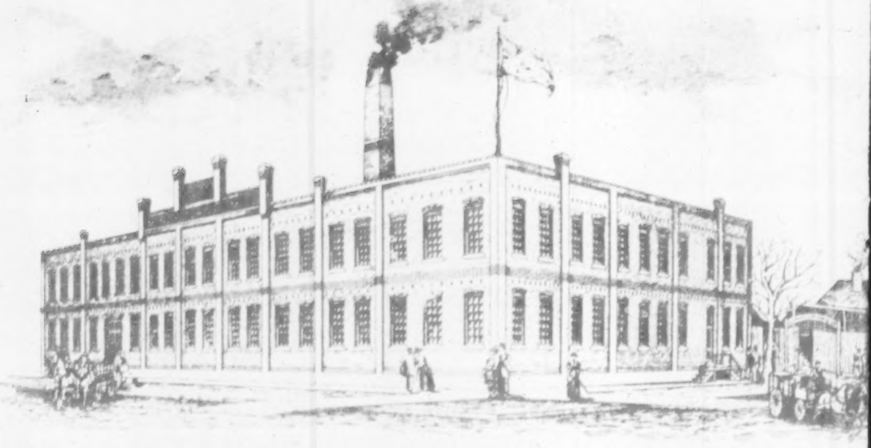
QUALITY
SERVING the Water and Gas Industries
A CENTURY OF SERVICE





ONE HUNDRED YEARS AGO...

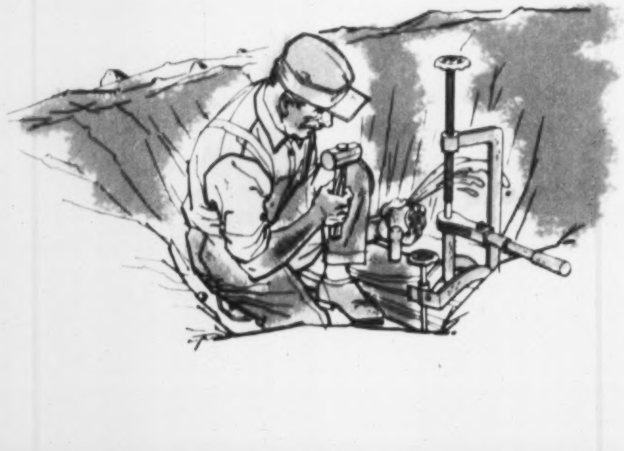
In the fall of 1857, Hieronymus Mueller came to Decatur, Illinois. Opposite the town's livery stable, he opened a one-man shop, making guns and tools and repairing anything mechanical. Mueller's inventive mind and insistence on perfection gained many customers, and the shop prospered.

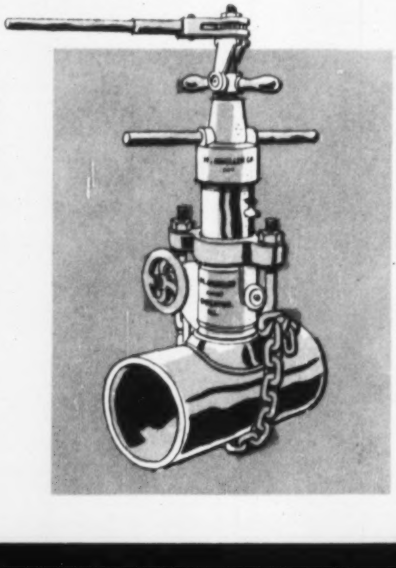
In 1871, Mueller was appointed plumber for the city of Decatur. In those days, the comfort and convenience of running water in the home was possible only after a cumbersome, troublesome service connection was made to the main. The plumber drilled a hole, almost through the main, with a crow and ratchet. A corporation "drive" stop was inserted and was secured in the main by a sharp blow with a sledge–if the blow hit true. If the blow missed, the plumber was drenched and the ditch filled with water, necessitating an interruption in service to all customers while pressure was reduced and the connection made.

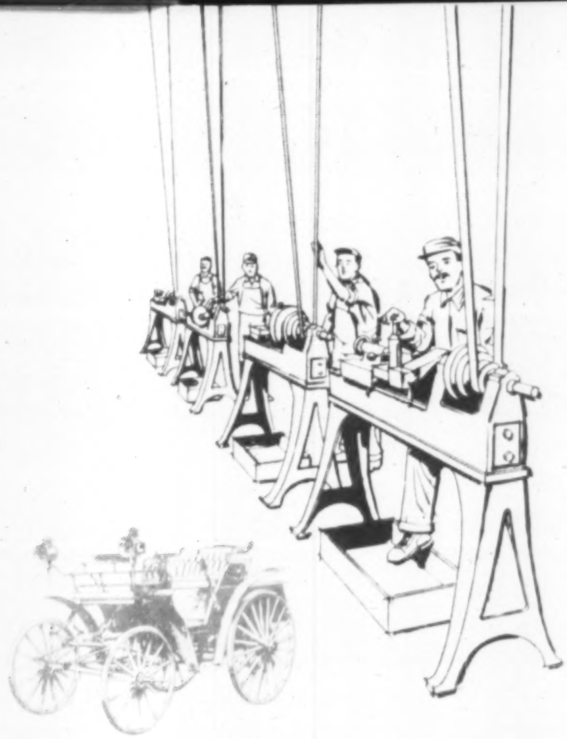
Mueller went to work to devise a more efficient method. After weeks of experimenting, he devised the original "B" Tapping Machine, permitting plumbers to drill through the main and insert a corporation stop under pressure, without loss of water. A vital need of an expanding industry had been answered–the first of many answers for gas and water problems through a century of progress.

The "B" Machine established Mueller in the manufacturing field and a new, three-story factory replaced the one-room shop. Sixteen men kept working full time to turn out an annual volume of $25,000 worth of water and gas distribution products. The demand for the luxury of running water and gas for cooking and heating was growing rapidly. By 1896, manufacture of products for these industries had become so important that the original shop was sold.

It was in this era that Mueller became interested in







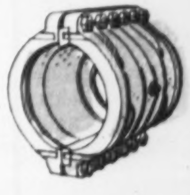
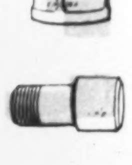
the new horseless carriage. He developed several innovations for the automobile, including variable-speed transmission, body suspension, water-cooling radiators, spark plugs and breaker circuit. Some of his original, patented ideas are still in use. Hieronymus, convinced of the future of this new invention, made plans to manufacture an automobile. But a gasoline explosion in a workshop on March 1, 1900, ended his life and ended the company's plans for the automotive field.

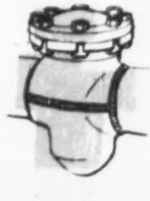
Mueller's sons assumed the leadership and continued the progress charted by the company's first president. Mueller Co. grew in service, in products, in employees and facilities.

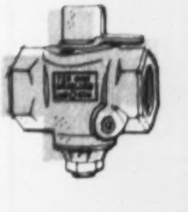
New products were introduced to meet the needs of the gas and water industries and old products were constantly improved. All were tried and tested to the standard of superior mechanical performance and manufacturing perfection that was established one hundred years ago by Hieronymus Mueller.

MILESTONES OF PROGRESS

1857 —Hieronymus Mueller opens general machining and manufacturing shop in Decatur.
1871 —Mueller appointed city plumber.
1872 —First tapping machine invented.
1872 —New Mueller factory erected.
1882 —Invented water pressure regulator.
1882 —Mueller joins AWWA—one of the first five members.
1885 —Large scale manufacturing of brass goods started.
1893 —H. Mueller Mfg. Co. incorporated.
1895 —First building erected at present Decatur plant location.
1895 —Hieronymus Mueller wins first American auto race with car imported from Germany and rebuilt.
1900 —Hieronymus Mueller passes away, March 1.
1902-3 —Decatur plant enlarged.
1905 —Eastern Division with offices in New York established.
1907 —Golden Anniversary Year. "Mueller" trademark registered.
1912 —Mueller, Limited, organized with plant at Sarnia, Ontario.
1917-18—Munitions and other war goods manufactured for allies.
1923 —Los Angeles branch established.
1924 —Company name changed to Mueller Co.
1924 —Copper pipe and fittings added to Mueller line.
1924 —Plant No. 2 in Decatur added.
1932 —Mueller's 75th Anniversary year.
1933 —Chattanooga manufacturing facilities acquired.
1933 —Steel Tees perfected—providing gas companies with simple, speedy service installations.
1938 —Line stopper fittings and equipment developed for work on gas or oil lines under pressure.
1941-45—Production of war materials claims manufacturing facilities of all plants.
1949 —Full line of No-Blo® equipment presented to the gas industry.
1950 —Tamper-proof gas stop introduced.
1957 —Mueller's 100th year of service to gas and water industries.





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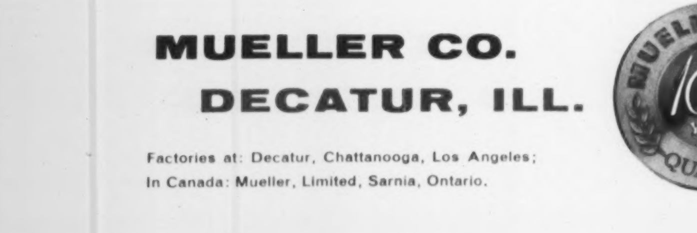
Mueller Co. looks to the future as it meets the needs of today.

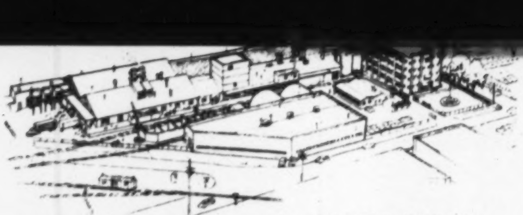
Mueller design and research engineers are already working on tomorrow's problems of the gas and water industries, developing new products and improving current ones.

Five modern factories hum with activity as they manufacture products for our rapidly-expanding gas and water industries. Precision machines and skilled workers insure strict adherence to Mueller's age-old standard of perfection.

A staff of trained salesmen is always available to assist in the selection, application and operation of Mueller products.

Upon the firm foundation established 100 years ago, Mueller management of today is building for tomorrow—for a second century of service to the water and gas industries!





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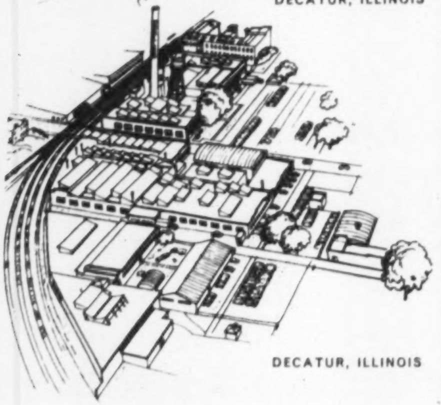

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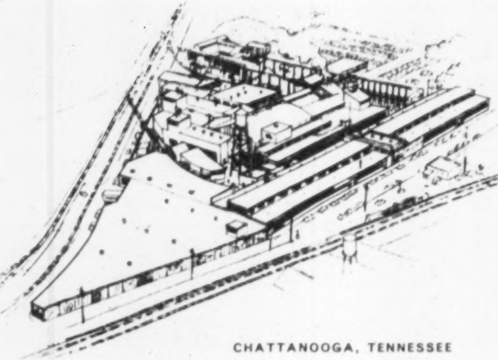
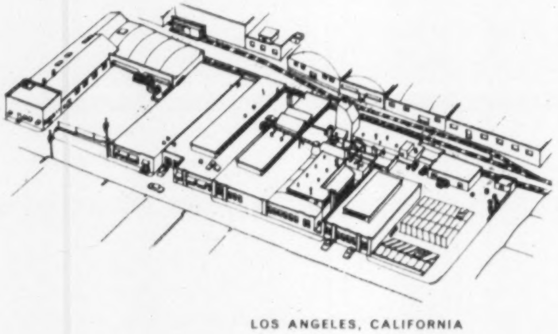
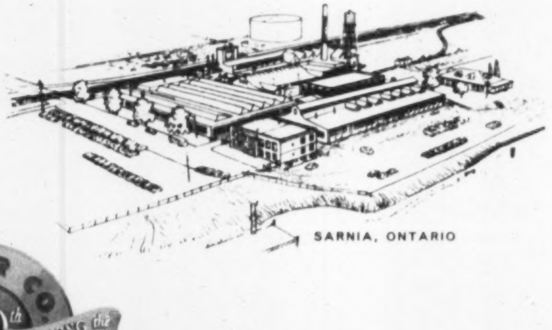


CHATTANOOGA, TENNESSEE



LOS ANGELES, CALIFORNIA



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Since 1857

Interest in soil mechanics proved as . . .

Soil Experts Pack London Conference

Robert F. Legget
Director, Division of Building Research
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Ottawa, Canada

That soil mechanics has come of age as an engineering science (if there had been any doubt about it) was proved by size and spirit of the conference in London, England, of the International Society of Soil Mechanics and Foundation Engineering, Aug. 12-21.

The conference was successful far beyond the expectations of the British National Committee which was responsible for arrangements. Over 40 countries were represented in the attendance of 1,200. Nine half-day technical sessions and two plenary sessions were held; all were packed to the doors, taxing to its maximum capacity the magnificent Great Hall of the Institute of Civil Engineers.

Mexico and the USSR were admitted to membership in the international society, bringing to more than thirty the countries which now have duly constituted and active national committees on soil mechanics.

This intense activity contrasted greatly with the modest meeting of less than 200 which assembled at Harvard University in 1936 to give soil mechanics its first public recognition. The contrast was most clearly shown by technical aspects of the conference.

Only by the firm use of a strict system of quotas for each member country was the number of papers accepted kept down to 176. All papers had to be submitted one year ago. Those attending the conference received, about two months ago, two printed volumes containing not only all of the 176 papers but also the concise reports of the general reporters for the eight sections into which the subject matter of soil mechanics and foundation engineering was divided.

• Dicussion only—No papers were read at the conference. Even the general reporters were given only 10 minutes each for an oral summary of their written summary reports. Practically the full time of the sessions therefore was used for discussion with a maximum allowance of seven minutes for all speakers. At the last technical meeting, as an example, 30 people had applied to speak but only 20 could be accommodated in the time available. All discussions, spoken and written, will appear in the third volume of the Proceedings which will appear later this year.

Since there were, therefore, over 200 separate contributions delivered to the technical sessions, it is clearly impossible to present any summary of their technical content or even to make any useful selection. The coverage was wide indeed, ranging from an analysis of the gradients of naturally stable slopes in the London Clay to a progress report on construction of a large steel sheetpile bulkhead wall in New York harbor.

Several speakers reported upon geotechnical investigations of obvious importance in the countries of eastern and central Europe, Czecho-Slovakia, Yugoslavia, Rumania and Poland. Two engineers were present from Hungary. A number of reports were given by representatives of the USSR (who also showed some films of current Russian engineering construction at an informal session). One speaker reported that, in the Ukraine, unstable clay bands have been strengthened by circulating hot air (up to 800°C) through 4 in. dia boreholes, 35 ft deep and also by actually burning gases in similar boreholes.

• Pile session popular—The session devoted to the bearing capacity of piles probably provoked the most lively discussion, as perhaps was to be expected. This discussion was introduced by Philip C. Rutledge of New York, the general reporter for the session. It was clearly the sense of the meeting, supported by the printed papers in this section, that the proper use of piles is still an art.

Calculation of the bearing strength of piles in granular materials is almost on a rational basis but the same cannot be said of friction piles in clay. H. Zweck of Karlsruhe, Germany, presented in this connection a comparison between the settlements of identical reinforced concrete slabs on the same clay, one pile supported and the other bearing directly on the clay. Settlement was appreciably greater with the piles than without, a result confirmed by other speakers for other clays.

The published Proceedings of the Conference are expected to have unusual value as a contribution to the literature of civil engineering. The three volumes will be available generally when the third volume has been printed—at a price of approximately $70. Only a limited number of sets are being printed, by London publishers (Butterworths). Inquiries should be addressed to A. Bannister, Secretary I.S.S.M. and F.E., c/o Institution of Civil Engineers, Great George Street, Westminster, London, S.W. 1.

• Soil classification coming—The proceedings will not be the only permanent result of this great London gathering, for the Conference appointed strong subcommittees to investigate the possibility of achieving international agreement upon standard nomenclature for soil mechanics on an agreed system of classifying soil mechanics literature (as a preliminary to developing an abstracting service), and for a standard method of conducting penetration tests as a means of subsurface investigation. It is intended and expected that all three subcommittees will have real progress to report by the time of the next Conference in 1961.

Next time, simultaneous sessions on specific technical subjects will probably be essential, as will also be the allowance of more time for small group discussions. On the one free afternoon of the London program, five separate discussion sessions were hurriedly organized and proved to be among the most useful meetings of the entire conference.

This showed, once again that when those with common interests in such scientific fields as soil mechanics meet together for mutual discussion, even the barriers of language fail to halt the advance of scientific inquiry.

• Terzaghi honored—Professor Karl Terzaghi, who presided over the entire session, was elected Honorary President of the International Society of Soil Mechanics and Foundation Engineering at the end of its fourth conference.

Professor A. W. Shempton, of Imperial College, London, succeeds Karl Terzaghi as president. Six vice presidents for continental areas were elected as follows: Europe, A. Mayer of France; Africa, J. E. Jennings of South Africa; Asia, K. L. Rao of India; Australasia, C. D. Aitchison of Australia; South America, A. Moreto of Argentina.

The author of this article was elected vice president for the continental area of North America.

(*International continued on page 88*)

Protection Must Fit

the perils you face!

Every type of business venture overseas has its own particular hazards. Every country has its own laws, customs and conditions. All may affect the security of your business unless your insurance has been carefully patterned to the risk and its location.

Whatever your business—wherever it is abroad—AFIA has the skill, know-how and experience to provide you with insurance that conforms to conditions to meet the highest standards of sound protection. World-wide in scope, operating through 600 offices in 69 foreign countries, AFIA has been successfully serving leaders in American industry for decades.

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Airport Chain Planned For Ethiopia Hinterlands

The consulting engineering firm of Ammann & Whitney, New York, has been awarded a contract to plan a chain of about 25 airports for the Ethiopian Government.

Confirmation of the award has been received from Addis Ababa, the Ethiopian capital.

The Ethiopian Government has received a $24 million loan from the World Bank to start planning and construction.

New Auto Tunnel Planned For Cuba's Capital City

A second vehicular tunnel will be constructed under the Almendares River, Cuba at a cost of $7 million. President Fulgencio Batista signed a decree authorizing the Banco de Desarrollo Economico y Social (BANDES) to finance the operation through a bond issue.

A four-lane tube is now in operation under the Almendares River, which divides the Vedado section of Havana from the township of Marianao and its Miramar suburb.

France Seeks Private Funds To Pay for Road Work

One by-product of the current economy drive in France is the renewed emphasis on financing new road construction by private rather than government capital.

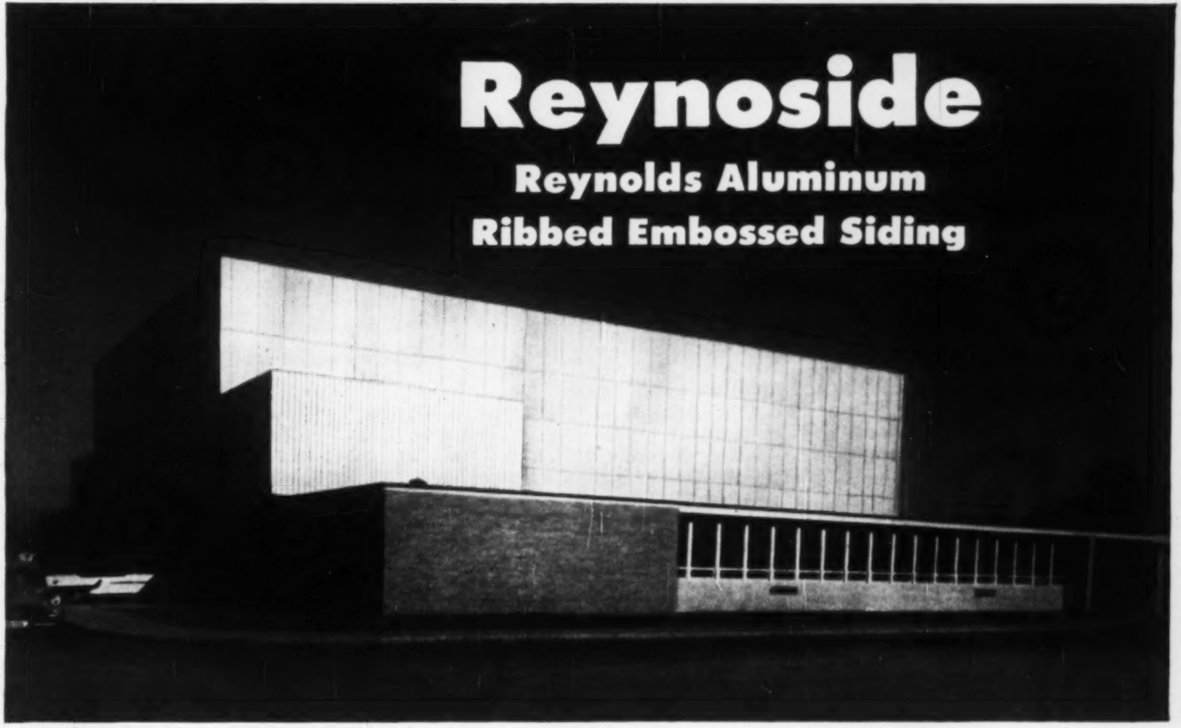
French Finance Minister Felix Gaillard recently announced that the principle of financing highways by means "outside the budget" will be pushed by the government. He hopes to see private capital form into groups to finance toll highways.

A law passed by the National Assembly in 1955 permits the formation of such companies, although the government has always preferred to do the job, paying for it from appropriations voted by the assembly.

The new policy comes at a time when a 300 billion franc ($715 million) highway program is in the works. Over the next 10 years some 1,250 miles of new roads will be built in France—if the necessary financing is forthcoming.

At present France has only one toll highway in the works—a 30 mile stretch paralleling the Cote d'Azur—from Nice through Cannes to Frejus. A 45 mile tollroad between Vienne and Valence, both south of Lyon, may be financed by another private company. No other attempts have been made to finance highways by the toll system.

A lesson in beauty and efficiency with economy



Reynoside

Reynolds Aluminum
Ribbed Embossed Siding

Shawano High School,
Shawano, Wisconsin

Architect:
Edgar A. Stubenrauch &
Associates
Sheboygan, Wisconsin

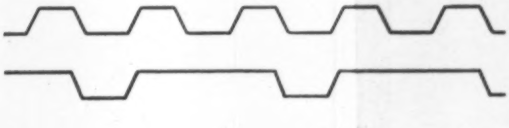
General Contractor:
Palisades Construction Co.
Appleton, Wisconsin

Materials:
Reynoside* 8″ Rib (.051 thickness) with 1½″ glass fiber insulation and back-up sheet of .032″ flat-embossed Reynolds Aluminum.

How to achieve efficiency and beauty economically is a lesson well taught by this magnificent high school...a lesson that applies to all modern industrial building. Economy starts with the rapid, low-cost erection of the wall. Not merely beautiful, its two highly heat-reflective aluminum surfaces combine with glass fiber insulation between to assure significant winter fuel savings as well as cooler classrooms in hot weather. Aluminum slashes maintenance costs, too. Rustproof and highly corrosion-resistant, it withstands weather and time without painting...ever. Thus low applied cost is paired with low upkeep for all-around economy!

A complete installation service is available. For name of your nearest Jobber-Erector, call the Reynolds Office listed under "Building Materials" in classified phone books of principal cities. For literature, write Reynolds Metals Company, Building Products Division, Louisville 1, Kentucky.

See "Circus Boy", Sundays, NBC-TV. Watch for Reynolds on "Disneyland", ABC-TV Network.



*Reynoside standard types are 4″ rib, .032″ thick; 8″ rib, .032″ and .040″ thick. Embossed finish. Lengths from 5′ to 22′5″ in 6″ increments. Nominal width coverage is 40″.

REYNOLDS ALUMINUM

BUILDING PRODUCTS

Field and Office

New Soil Core Sampler Is Reported Effective

Geocon, Ltd., of Montreal, first firm in the Western Hemisphere to use the Swedish developed steel foil sampler to obtain undisturbed soil cores, reports it to be quite effective. It has obtained continuous core samples up to 130 ft in length in cohesive soils.

As the head of the device is pushed into the ground, the soil core is insulated from the casing by thin vertical metal strips. These foils vary in thickness from .0025 to .004 in.

The steel foil sampler has been employed to probe foundation conditions for the 20 mile causeway being constructed by Southern Pacific Railway over Great Salt Lake, for a new Aluminum Co. of Canada smelter in northern Quebec, for roadbeds for the Ontario Department of Highways, for wharves being built at Contrecoeur near Montreal on the St. Lawrence River by the Iron Ore Co. of Canada and for the Burnaby Lake Freeway now being designed by the British Columbia Department of Highways.

Wall Panels Can Be Doors

An unusual detail in a modern new building for Wm. K. Holt Machinery Co., Caterpillar dealer in San Antonio, Tex., is provision for converting any of the wall panels in the service and shop part of the structure into overhead doors should more openings onto a large paved outside area be required.

Some 360x160 ft, the structure is built of poured-in-place, post-tensioned members (columns on 40 ft spacing) and enclosed with tilt-up concrete wall panels.

Overhead doors are used in the several of the 20 ft wide panels, and it is contemplated that more may be required.

Photo courtesy of Stow Mfg. Co.

Screed Vibrates Sloped Walls Quickly

A special vibrating screed was used by the Elmhurst Contracting Co., New York, N. Y., to overcome problems in vibrating and screeding three miles of sloped concrete slabs for a flood control project near Bradford, Pa.

The 15 ft long screed was equipped with two gasoline-powered vibrators mounted on special brackets to keep the engines vertical while the screed remained perpendicular to the slab surface.

The wall, 8 in. thick and 18 ft high, was laid on a bank having a 1½: 1 slope. Screeding from the top down caused the stiff, 1½ in. slump concrete to flow too fast ahead of the beam. The screed was pulled from the bottom up by power winch, since the weight of the screed and the drag of the concrete made it impossible to pull it up by hand.

The screed struck off and vibrated the concrete at the same time. Only one pass was necessary. When the creed reached the slab top, it was lifted by crane and placed at the bottom of the next section.

The slab was then hand troweled to obtain the final finish. By this method, the contractor was able to finish eight 15 x 18 ft sections a day.

To Best Meet Fencing Needs

PAGE FENCE

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- **—8 Fence Styles**
- **—8 Fence Heights**
- **—4 Fabric Metals**
- **—2 Types Metal Posts**
- **—Top Rail or Top Wire**
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- **—6 Gate Styles, Many Widths**

• PAGE provides a wider choice of long lasting fence fabric metals. Each has characteristics which meet individual preferences or make it more suitable to meet certain climatic or service conditions.

Galvanized Steel • Woven of time-proved open-hearth steel wire, hot-dipped galvanized after weaving to assure long service.

Aluminized Steel • By a PAGE patented process a coating of commercially pure aluminum is bonded to steel wire to provide longer corrosion resistance, yet its cost is comparable with fence fabric having shorter life expectancy.

Aluminum • Another metal in non-corrosive class. It will not rust, will not discolor materially under unfavorable conditions. Semi-flat weaving gives it exceptional strength.

Stainless Steel • This chrome-nickel fabric is immune to practically all corrosive elements. Advantageous near salt water and where air is laden with smoke, sulphur and other factory emissions.

Nation-wide Erecting Service • In more than 100 districts there are local, responsible members of Page Fence Association—the largest fence engineering, erecting and servicing organization. These experts own their own plants and equipment, carry complete stocks of PAGE FENCE materials, and operate crews of trained workmen. Each firm is permanently located and has lasting interest in every job it handles.

Write for file-size folder containing full information and name of member nearest you. Address—

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A PRODUCT OF PAGE STEEL & WIRE DIVISION
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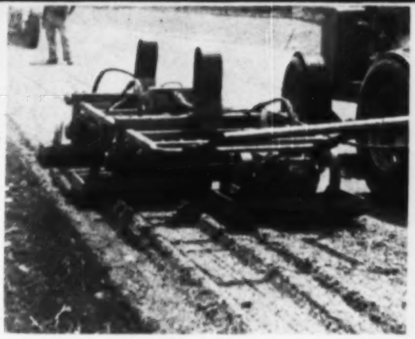
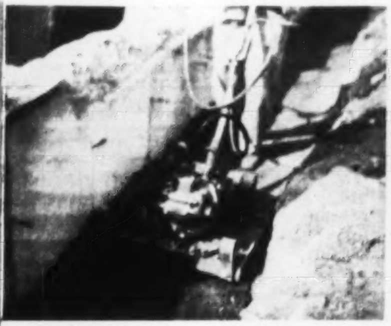
10 LEADS TO BETTER, FASTER RESULTS and BIGGER PROFITS!

MACADAM DENSIFICATION. The Jackson Multiple Compactor gives you base and sub-base compaction at its quickest and best. Each of the 6 units in workhead delivers 4200 3-TON BLOWS per minute.



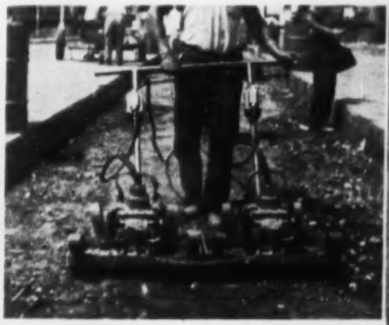
PAVEMENT WIDENING. Any arrangement desired of the vibratory units of the Jackson to fit the job most advantageously and provide 100% of required density in ONE PASS is easily and quickly made.

GRANULAR SOIL FILLS. The Multiple Compactor quickly achieves specified density, gets into places bigger, more expensive equipment cannot reach. Individual units can be detached, operated as manually guided compactors.

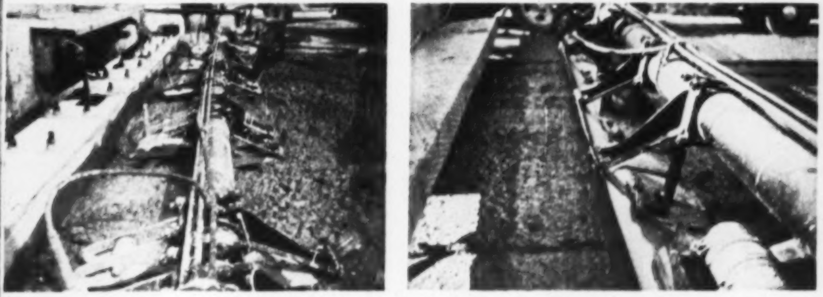


SOIL COMPACTION. Self-propelling, the Jackson Compactor, with 12" to 26" interchangeable bases, achieves specified density of granular soils in 6" to 8" layers at the rate of 600 sq. yds. per hr. Perfect for bridge and pipe line fills, concrete floor sub-bases and similar applications.

BLACKTOP WIDENING & PATCHING. The same machine operated from power plant on auto-trailer with pickup for Compactor is most efficient means of blacktop pavement patching, paving walks, drives, etc. Will compact up to 600 sq. yds. per hr close to maximum density.



TWIN-UNITS — ONE OPERATOR. With a two-unit, side-by-side or tandem hookup of JACKSON COMPACTORS, one man can readily do the work of two, since the compactors are self-propelling and he has only to guide them.



CONCRETE VIBRATION FOR HIGHWAY AND AIRPORT PAVING

INTERNAL TYPE; super-powered, gives full width internal vibration through full depth of very thick slabs. Saves time, cement; provides greater density and compressive strength.

SURFACE TYPE; does perfect job of vibrating all mixes in depths used on highway projects. The owner of a JACKSON Paving Tube can quickly switch from internal to external vibration, or vice versa, at minimum expense.

MUNICIPAL PAVING: This vibratory screed strikes off to all crowns, undercuts at curb or sideform, works right up to and around obstructions, is rolled back for second passes on 4 rollers. Most productive and convenient screed made.

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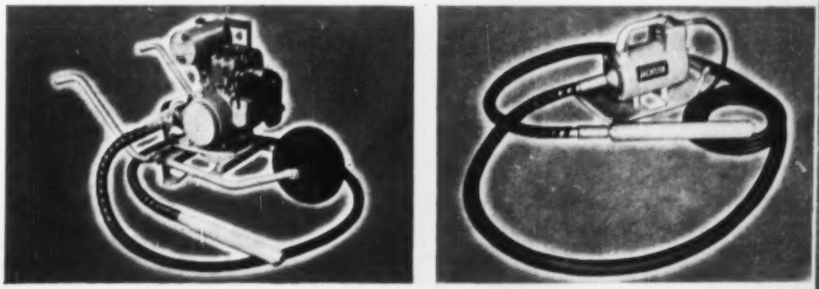
YOUR *JACKSON DISTRIBUTOR*

JACKSON
VIBRATORS, INC.

LUDINGTON, MICHIGAN



GENERAL CONSTRUCTION

(Left); 6 H.P. engine-driven, flexible shaft vibrator. Excellent for both thin and thick sections. (Right); 2½ H.P. electric vibrator (for light-socket operation). Handy as a pocket in a shirt, powerful enough to handle all general construction concrete vibration with shafts up to 28'.

Ready to Build?... *With What?*

DON'T OVERLOOK

PRESTRESSED CONCRETE

Today, structures of virtually every description are being built of prestressed concrete (not to be confused with reinforced concrete). Garages, schools, office buildings, factories, warehouses, hospitals and motels, highway bridges and piers are typical examples of this increasingly popular building material.

Most prestressed concrete structures employ precast pretensioned members in which high-strength steel strands are stretched in forms before the concrete is poured around them. After sufficient curing to bond the concrete to the strands, the tension is gradually released.

Construction speed, structural balance, permanence, insurance benefits and economies in maintenance and design are just a few of the advantages that are realized in prestressed structures—factors to be considered in any proposed building.

Roebling, as a pioneer in the development of prestressing elements and techniques in the United States, is in a position to furnish you with complete information and assistance on any matter concerning prestressing methods, applications and materials. Write Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

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Subsidiary of The Colorado Fuel and Iron Corporation

Consult Roebling—
First in the U. S.
with prestressing
and tensioning
elements

Books

Book Club Organized To Cut CE Book Costs

Formation of a Civil Engineers' Book Club has been announced by McGraw-Hill. Members will be entitled to a discount of about 15% on every purchase from the club list.

Purpose of the club is to bring regularly to the attention of civil engineers outstanding books in their field that they might otherwise miss. The club also expects to help engineers keep their libraries up to date.

Members will receive, every other month, the Civil Engineers' Book Club Bulletin, featuring the selection of that month and describing a number of alternate choices. Headquarters of the CEBC are at 330 W. 42nd St., New York 36, N. Y.

Indeterminate Structures

Fundamentals of Statically Indeterminate Structures—By C. L. Shermer. 264 pp. Ronald Press Co., New York 10, N. Y. $6.50.

Engineers who missed the opportunity to study indeterminate structures in college and those seeking to brush up on this subject should find this new book helpful. Intended for junior and senior-year courses, it focuses attention throughout on fundamental concepts.

The text covers analysis of indeterminate trusses and beams, as well as rigid frames, arches and rings. Separate chapters are devoted to slope-deflection theory, moment distribution and influence lines. Its final chapter deals with the effects of plastic yielding and computation of the ultimate strength of continuous beams and one-story rigid frames.

Books & Pamphlets

Air Conditioning—by Willis R. Woolrich and Willis R. Woolrich, Jr. 384 pp. Ronald Press Co., 15 E. 26th St., New York 10. $7.50.

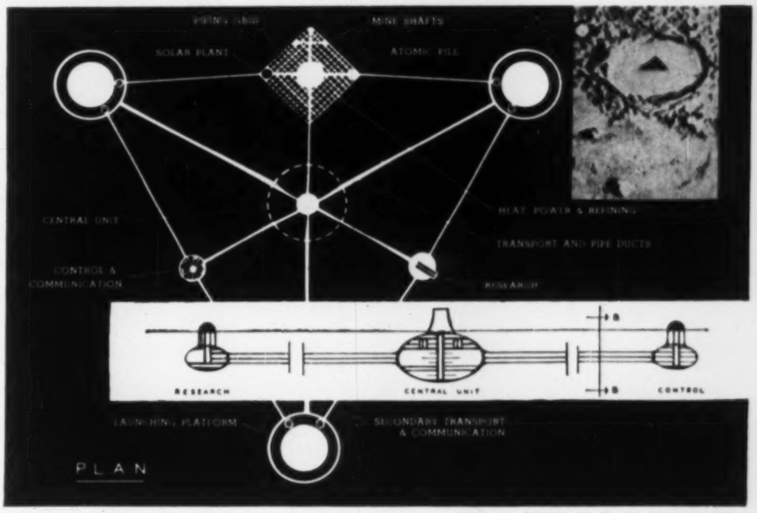
Compilation of Steel Piping Materials—455 pp. American Society for Testing Materials, 1916 Race St., Phila. 3, Pa. $4.50.

Proceedings of the Fifth Southern Municipal and Industrial Waste Conference—261 pp. Dept. of Civil Engineering, Duke University, Durham, N. C. $1.50.

The Municipal Year Book—581 pp. International City Managers' Association, 1313 E. 60th St., Chicago 37. $10.00.

(Books continued on page 94)

MARS outstanding design SERIES



SCALE OF PLAN: 1" = 500 FT.

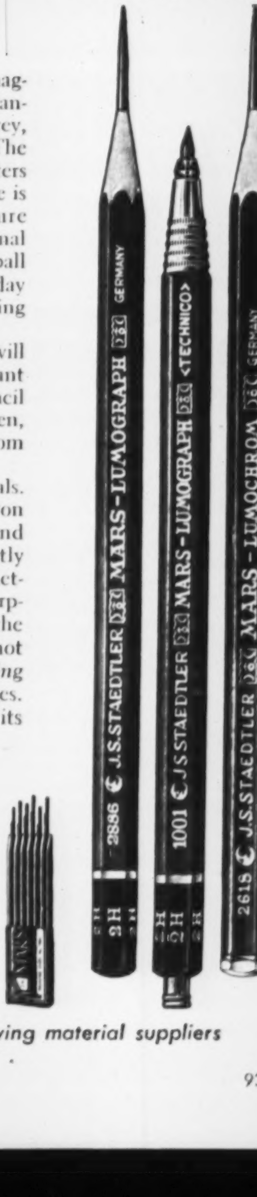
lunar base

Tomorrow's realities depend on research and imagination today. Both were used extensively in the planning of this lunar base designed by William G. Harvey, Jr. to accommodate space ships and travelers. The suggested location is "Aristotle," one of the craters near the north pole of the moon. Most of the base is beneath ground level to minimize temperature changes. Living quarters are spacious and recreational facilities include a swimming pool and basketball court. Power is supplied by solar plants during the day and atomic pile at night. Research, living and working areas are joined by monorail subway.

No one can be sure which of today's new ideas will become reality tomorrow. But it will be important then, as it is now, to use the best of tools when pencil and paper translate a dream into a project. And then, as now, there will be no finer tool than Mars—from sketch to working drawing.

Mars has long been the standard of professionals. To the famous line of Mars-Technico push-button holders and leads, Mars-Lumograph pencils, and Tradition-Aquarell painting pencils, have recently been added these new products: the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman's" Pencil Sharpener with the adjustable point-length feature; and—last but not least—the Mars-Lumochrom, the new colored *drafting* pencil which offers revolutionary drafting advantages. The fact that it blueprints perfectly is just one of its many important features.

The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H. The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Mars-Lumochrom colored *drafting* pencil, 24 colors.


MARS
2886 J.S.STAEDTLER MARS-LUMOGRAPH GERMANY
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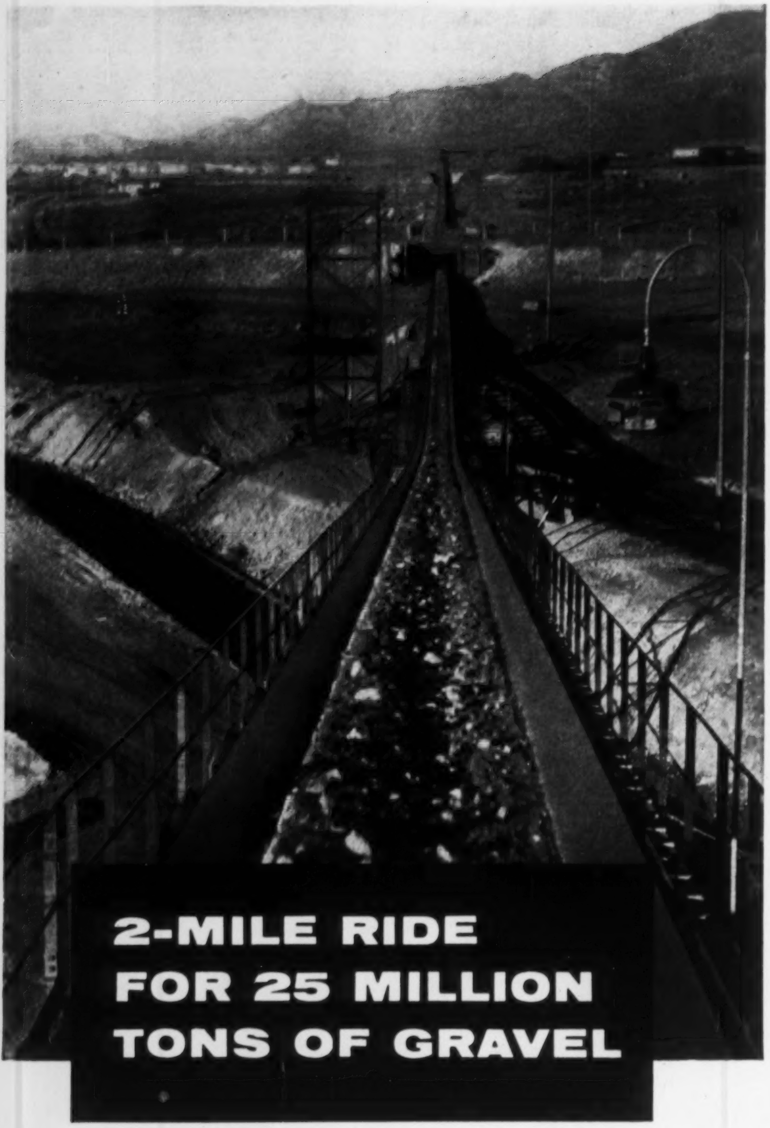

To help build Southern Pacific Railroad's 13-mile roadbed across Great Salt Lake, Morrison-Knudsen Co. had Hewitt-Robins develop a bulk materials handling system. In ton-miles-per-hour capacity, this system surpasses any previous belt conveyor installation. Its conveyors travel at speeds up to 850 fpm, carry 75,000 tons of rock and gravel per day, load barges at 12,000 tons per hour.

The entire installation—including 3 scalpers, 13 conveyors, 23,000 feet of belting, 4,700 idlers, a 164-ft. radial stacker, 10 belt feeders, 2 recovery conveyors and 27 speed reduction drives—was designed, manufactured and delivered by Hewitt-Robins in less than eight months. To find out how H-R products and services can help you, consult your classified telephone directory for the nearest H-R representative, or contact Hewitt-Robins, Stamford, Conn.

HR HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS . . . POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE . . . VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

Research on Fire—192 pp. National Fire Protection Assoc., 60 Batterymarch St., Boston 10, Mass. $5.00.

Corrosion and Wear Handbook for Water Cooled Reactors—293 pp. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. $2.25.

Welding Handbook—American Welding Society, 33 W. 39th St., New York 18. $9.00.

Oily Substances and Their Effects on the Beneficial Uses of Water—By Jack Edward McKee, 72 pp. State Printing Division, Documents Section, Sacramento 14, Calif. $1.25 (California addressees add $0.05 sales tax).

Heating, Ventilating, Air Conditioning Guide, 1957—Volume 35. American Society of Heating & Air-Conditioning Engineers, Inc., 62 Worth St., New York 13. $12.00.

Heat Transfer and Fluid Mechanics Institute Preprints of Papers 1957—439 pp. Stanford University Press, Stanford, Calif. $8.50.

Experimental Boiling Water Reactor—233 pp. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. $2.25.

Standard Handbook for Electrical Engineers—Ninth edition, 2,311 pp. McGraw-Hill Book Co., 330 W. 42nd St., New York 36. $19.50.

American Civil Engineering Practice—Volume III.—John Wiley & Sons, Inc., 440 Fouth Ave., New York 16. $25.00.

Elements of Pure and Applied Mathematics—by Harry Lass. 491 pp. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36. $7.50.

Acoustics for the Architect—by Harold Burris-Meyer & Lewis Goodfriend. 126 pp. Reinhold Publishing Corp., 430 Park Ave., New York 22. $10.00.

Elementary Soil and Water Engineering—296 pp. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16. $6.25.

The Demand and Supply of Scientific Personnel—by David M. Blank and George J. Stigler. 200 pp. National Bureau of Economic Research, Inc., 261 Madison Ave., New York 16. $4.00.

Mechanical Vibrations—by Bernard Morrill. 265 pp. Ronald Press Co., 153 E. 26th St., New York. $6.50.

Computing With Desk Calculators—by Walter W. Varner. 108 pp. Rinehart & Co., 232 Madison Ave., New York 16. $2.00.

The Analysis of Engineering Struc-

Concrete sets faster, tests stronger, requires less cold weather protection.

Columbia Calcium Chloride

KEEPS HOT SCHEDULES FROM COOLING OFF

Hot job schedules and falling temperatures used to turn contractors' hair snow-white overnight. Barbers' and wives report this isn't nearly as great a problem today. News of Columbia Calcium Chloride has gotten around.

This superb product is one reason contractors' profits are jumping, instead of their nerves. Even at 40° and below (not so far away now) concrete averages *three times faster* on both initial and final set when Columbia Calcium Chloride treated mix is used. There's something about this unique chemical agent that just warms up to chilly weather.

As an instance, look what happens to compressive strength when 2 percent (by weight of cement) Columbia Calcium Chloride is added to Type I cement. At 55°F, concrete so treated shows 1, 3, and 7 day strengths equal to or better than plain concrete tested at 73°F. And at 40°F, treated concrete reaches ⅓ of 28 day strength in just 3 days, ½ in 7 days! The same volume of Columbia Calcium Chloride added to Type III cement produces these results: normal 28 day strength in only 7 days at 55°F, ⅔ of 28 day strength in 3 days at 40°F.

You meet strength specs days ahead, pull forms for other jobs, get finishers on and off the site without profit-killing overtime. *Right now* is the perfect time to analyze your batching procedures, or to talk to your ready mix suppliers. If Columbia Calcium Chloride isn't part of your pours, something's apt to be wrong. Write today for your free copy of *Year Round Concreting* to our Pittsburgh address or any district office.

Finishing is timed tighter to rest of schedule without overtime and form tie-ups.

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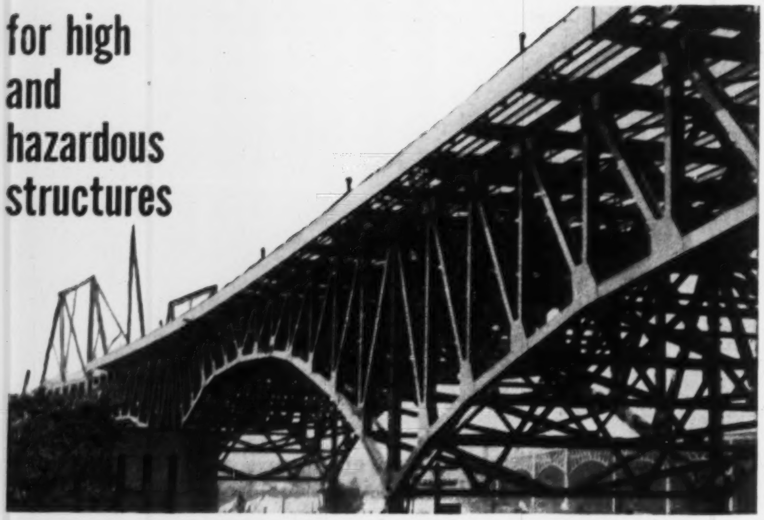
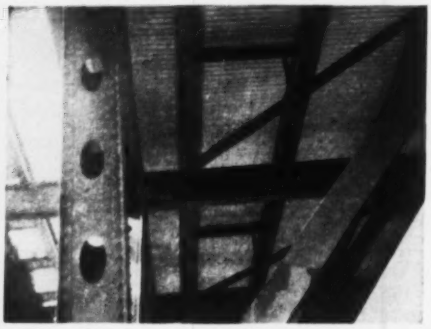
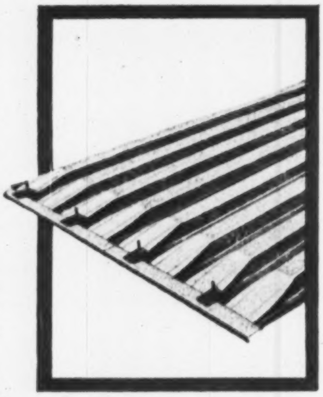
IN CANADA: Standard Chemical Limited
and its Commercial Chemicals Division

for high
and
hazardous
structures



Leave-in-Place
Steel Forms
for
concrete bridge
decking





USF galvanized Steel Forms provide the industry's most practical solution for laying concrete bridge decking where removal of conventional forms would involve hazardous and expensive operations. All installation is completed from top side without special tools or equipment. They are *left in place* after concrete is poured, eliminating entirely costly erection and removal of shoring, catwalks and wood forms. The USF Steel Form is specifically engineered for this service, with more than adequate capacity to support the required amount of wet concrete.

Send for illustrated data sheet.

UNITED STEEL FABRICATORS, INC.
WOOSTER, OHIO
PRODUCTS
Hollow Metal Doors • Prefabricated Metal Buildings • Window Wells • Highway Guard Rail • Bridge Flooring • Steel Forms for Concrete Bridge Floors • Corrugated Metal Pipe • Sectional Plate Pipe and Pipe Arches

tures—Third edition. By A. J. S. Pippard and J. F. Baker. 564 pp. Edward Arnold Ltd., 41 Maddox St., London W. 1, Eng.

Procedure Handbook of Arc Welding Design & Practice—The Lincoln Electric Co., Cleveland 17, Ohio. $3.00.

Praktische Winke Zum Studium Der Statik—by Ernst Kohl. 224 pp. Springer-Verlag, Reichpietschufer 20, West Berlin 35, Germany.

A Handbook of Hard Metals—by W. Dawihl, 162 pp. Philosophical Library, Inc., 15 E. 40th St., New York 16, N. Y. $10.00.

Pressure Grouting Fine Fissures—Technical Report No. 6-437. U. S. Army Engineer Waterways Experiment Station, Vicksburg, Miss. 75¢.

Moments in Simply Supported Skew I-Beam Bridges—Bulletin No. 439. University of Illinois Engineering Experiment Station, Urbana, Ill. $1.00.

The Static Strength of Rivets Subjected to Combined Tension and Shear—Bulletin 437. University of Illinois Engineering Experiment Station, Urbana, Ill. 45¢.

Torsional Properties of Steels at High Rates of Strain—Bulletin No. 438. University of Illinois Engineering Experiment Station, Urbana, Ill. 35¢.

The Durability of Reinforced Concrete in Buildings—Special Report No. 25. Building Research Station, Garston, Watford, Herts, Eng.

Bond between Concrete and Steel and the Spacing or Reinforcement—Engineering Report No. 26. Iowa Engineering Experiment Station, Iowa State College, Ames, Iowa.

Utilization of Highway Engineering Manpower—Bulletin 134. Highway Research Board, 2101 Constitution Ave., Washington, D. C.

Road Roughness and Slipperiness—Bulletin 139. Highway Research Board, 2101 Constitution Ave., Washington, D. C. $1.60.

Factors Influencing Ground Freezing—Bulletin 135. Highway Research Board, 2101 Constitution Ave., Washington, D. C. $3.40.

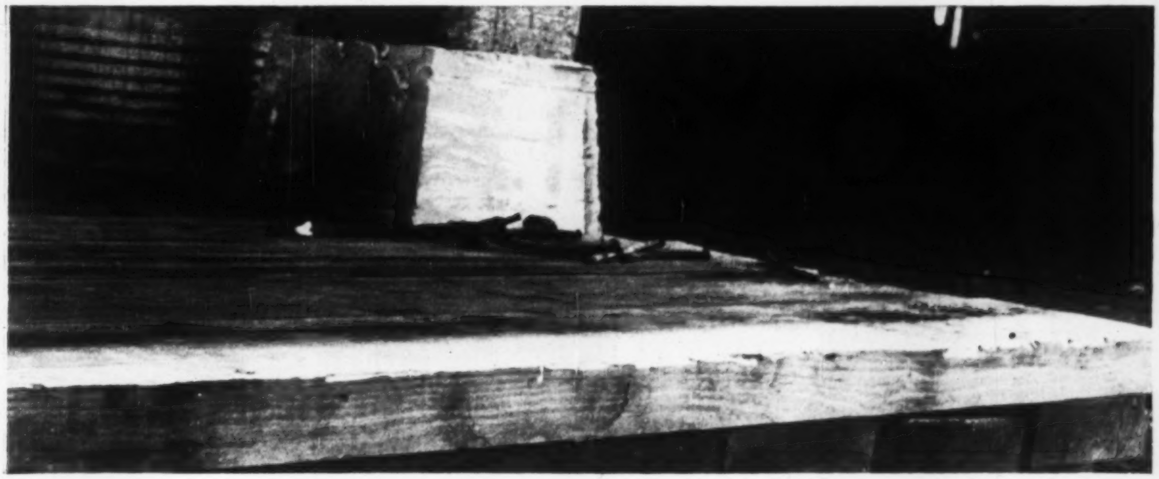
Control of Steel Construction to Avoid Brittle Failure—184 pp. American Welding Research Council, 33 W. 39th St., New York 18, N. Y. $4.50.

Practical Geometry and Engineering Graphics—by W. Abbott. Sixth Edition. 366 pp. Blackie & Son Limited, 17 Stanhope Street, Glasgow, Scotland. 22s. 6d. net.

On the Kansas City Southern:

Only wood, with its natural resiliency, holds up under repeated heavy impact.

Penta protects this lumber shed



against rot and termite attack

Rot and termites strike quickly in the warm, moisture-laden atmosphere of Port Arthur, Texas. Ordinarily, they'd make fast work of the Kansas City Southern Railway lumber shed located there.

But the Penta-treated wood used in much of the shed's flooring and many of its supporting members means it will stay strong, solid and resilient for many years to come, despite any number of termites or rot organisms nearby. Penta-treated wood is selected for such installations because of its immediate availability, low initial installation cost, and reduced cost of annual upkeep.

Saves Money! Penta-treated wood will save you money wherever decay or insects threaten, just as it has the Kansas City Southern. Its service life is 4 to 5 times *longer* than untreated wood. You spend less for replacements, less for maintenance.

Stays in wood. Penta is an oil-borne (not water-soluble) preservative. It doesn't leach out to leave wood vulnerable to attack.

Faster, easier handling. No squawks from workmen about difficult or dirty handling. Because Penta-treated wood is clean, it speeds work, raises morale.

Adding all these things up . . . doesn't Penta sound like it's best for you? For a list of treating plants near you, write to...

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MONSANTO CHEMICAL COMPANY
Dept. PI-25, St. Louis 1, Missouri

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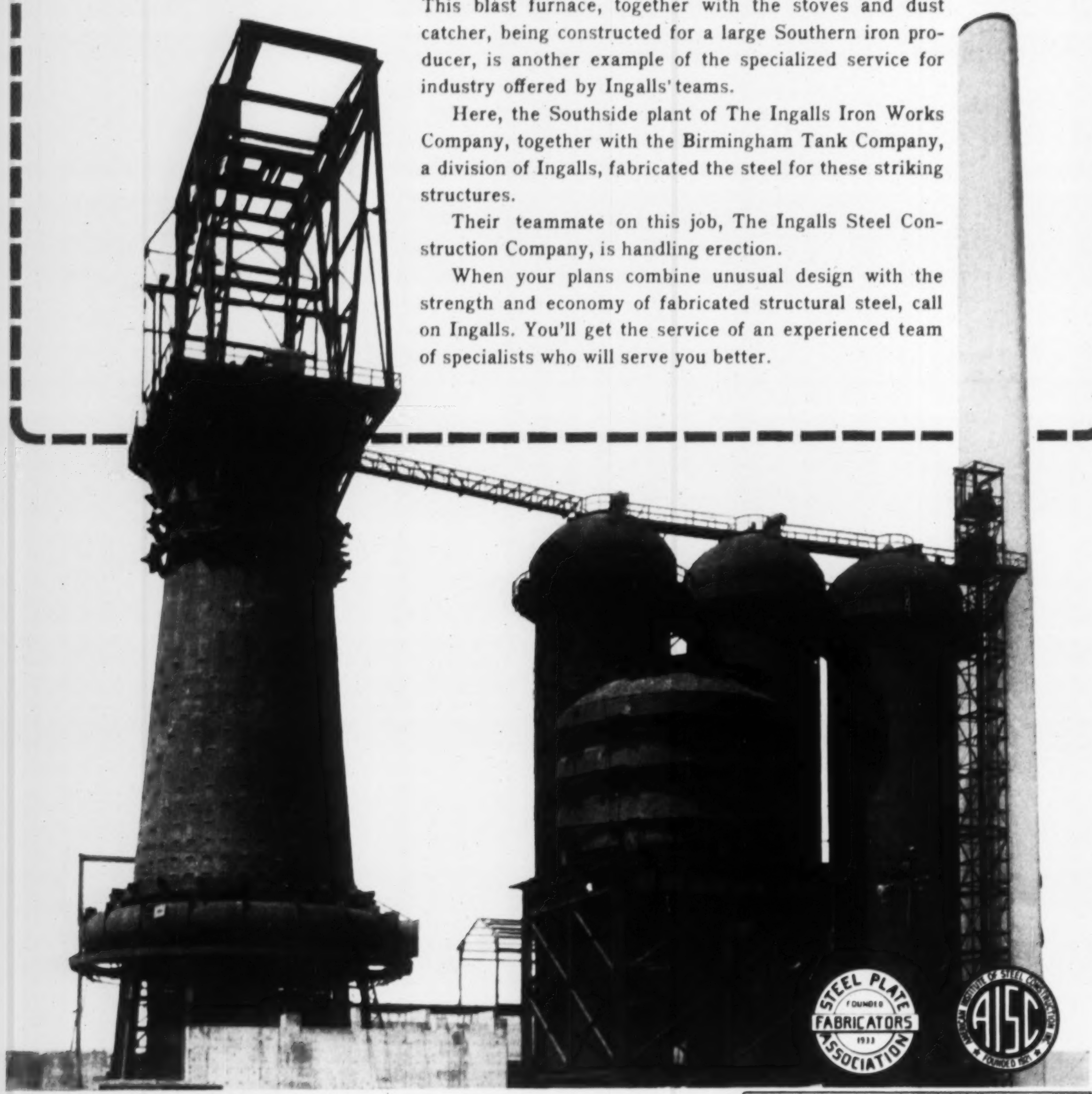
Where Creative Chemistry Works Wonders For You

Towers of Strength

fabricated and erected by Ingalls



This blast furnace, together with the stoves and dust catcher, being constructed for a large Southern iron producer, is another example of the specialized service for industry offered by Ingalls' teams.

Here, the Southside plant of The Ingalls Iron Works Company, together with the Birmingham Tank Company, a division of Ingalls, fabricated the steel for these striking structures.

Their teammate on this job, The Ingalls Steel Construction Company, is handling erection.

When your plans combine unusual design with the strength and economy of fabricated structural steel, call on Ingalls. You'll get the service of an experienced team of specialists who will serve you better.

The Ingalls Iron Works Company
Sales Offices: New York, Pittsburgh, Chicago, Houston, New Orleans, Atlanta

Birmingham Tank Company
Sales Offices: New York, Pittsburgh, Chicago, Atlanta, New Orleans, Pascagoula

The Ingalls Steel Construction Company
Sales Offices: New York, Chicago, New Orleans, Pittsburgh, Houston, Atlanta

The Ingalls Shipbuilding Corporation
Shipyards: Pascagoula, Mississippi; Decatur, Alabama
Sales Offices: New York, Chicago, Philadelphia, Washington, Houston, New Orleans, Atlanta

THE
INGALLS
INDUSTRIES
Executive Offices
BIRMINGHAM, ALABAMA

Men and Jobs

Addison Named Baltimore County Traffic Engineer

Walter J. Addison, for the past two years an associate traffic engineer with Wilbur Smith and Associates, of New Haven, Conn., has been named first traffic engineer for Baltimore County, a political subdivision which almost surrounds Baltimore, extending from south of the city to the Pennsylvania border.

With the Smith firm, Mr. Addison designed traffic control devices for the Connecticut Turnpike and also has served as a consultant for the New York Thruway and the Ohio Turnpike. He has also been associated with the Scientific Design Co., New York, and with the New York City Department of Traffic.

He is a graduate of the College of the City of New York and holds a degree in civil engineering from New York University.

Careers

Public Works

R. C. Baird has been promoted to chief of the engineering division of the Southwestern Division, Corps of Engineers. He will be responsible for study, planning and design of water resources projects and military construction in the division area.

Richard M. Larimer has been appointed assistant to **Zoyd M. Flaler**, state director of public works. Mr. Larimer previously held the position of vice president in charge of engineering for the Knowlton Construction Co., Bellefontaine, Ohio.

James Hickey, formerly planning director for Southfield Township, a suburb of Detroit, has been named chief planner for the Tri-County Regional Planning Commission, Akron, Ohio, which serves Summit, Portage and Medina counties. He is a planning graduate of Michigan State University.

Paul D. Cook, city manager of Painesville, Ohio, announced—in his 30th year of public service—that he would resign September 30, to take an engineering position in private industry. He was Lake County sanitary engineer for 21 years and eight years ago became city manager.

George H. Tunison has been appointed executive directer of the Wilmington, Delaware, Parking Authority. He was formerly Sussex County division engineer for the State Highway Department.

Wesley A. Sweat, for the past two years chief engineer of the $70 million Jacksonville Expressway, Fla., has returned to the Florida State Road Department, where he had served as an engineer for 25 years.

W. C. Drenning, a former State Road Department engineer who was supervisor of construction on the Jacksonville Expressway, Fla., has been named acting chief engineer by the Jacksonville Expressway Authority.

Col. Paul C. Brown who for the past three years has been Chief of the Construction Division in the Directorate of Installations at Headquarters, U. S. Air Force in the Pentagon has completed his tour of active duty and been released. He has resumed his Civil Service status with the Forest Service, U. S. Department of Agriculture and has been assigned with the Division of Engineering in Washington, D. C.

Cameron W. Lee, head of the 14th engineering division of the North Carolina Highway Department, has been named assistant director of highways, a newly created position, and will be next to Highway Director **W. F. Babcock** as chief executive officer of the N. C. reorganized department.

Associations

John C. Knott, 30, of Jefferson City, Mo., has been appointed manager of the Associated General Contractors' Wyoming Chapter. Although the unit has been in existence more than 25 years, Mr. Knott is the first full-time representative to be retained. He was assistant manager of the AGC in Missouri prior to accepting the Wyoming position.

Carlos A. Weber, chief engineer of the Michigan State Highway Department, has been appointed chairman of the Design Committee of the American Association of State Highway Officials. Mr. Weber has been the Midwest region's member of the association's Committee on Planning and Design Policies for several years.

Business

George A. Reznicek has been elected Treasurer of the William L. Crow Construction Co. He is a graduate of Rensselaer Polytechnic Institute and joined the Crow company in 1934 as timekeeper. A resident of Chatham, N. J., Mr. Reznicek is now in his second term as mayor of that community.

M. Harry Wartur is now chief construction engineer for Brown and Blauvelt, consulting engineers. He was formerly executive vice president and chief engineer of Klevens Corp., New York contractors.

(*Men and Jobs continued on page 100*)

SOLID COMFORT
AND SUPERIOR PROTECTION
AT A NEW LOW PRICE!

THE GENTEX No. 105 SAFETY HAT

Delivers

Full-Shift COMFORT . . .
Men *like* to wear it because it's lightweight, with wrinkle-free adjustable head band and exclusive new better-than-ever snap-in sling.

Full-Shift PROTECTION . . .
Strong plastic construction that tops all Government safety standards, insulates against heat and sun and withstands over 10,000 volts.

You Can Bet your Life On a GENTEX®

Foremost Manufacturer of Helmets for the Military

Write today for a test hat and information on our new low prices.

GENERAL TEXTILE MILLS, INC. Dept. N
450 SEVENTH AVE., NEW YORK 1, N. Y.

Gurley Current Meters for measuring stream velocity in:

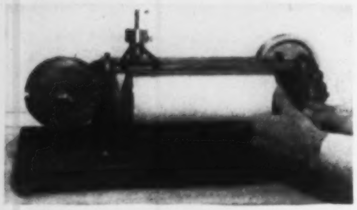
Fresh water—rivers, streams, canals, lakes

Salt or brackish water—with a newly-designed salt water model

Shallow or sluggish streams—with the Pygmy Current Meter

Industrial waste and sewage—where solids permit ...the Gurley Current Meter is made of non-corroding materials.

Gurley Current Meters have been the standard of the profession since 1870. Highly-standardized, easily-disassembled for cleaning...simple, precise and rugged. Write for "Gurley Current Meters" (Bulletin No. 700).



Gurley Graphic Water Level Recorders

Continuous record on graph chart for 24 hours or 8 days. Positive response to fluctuation by float, perforated tape and sprocket wheel. Finest quality "Chelsea" marine clock. Metal base and cover. Made of non-corrosive materials throughout. Ranges 1 to 40 ft., or 30 cm. to 12 meters.

Use Gurley Graphic Water Level Recorders when you need dependable records of reservoirs, hydro plants, sewers and sewage systems, irrigation and stream gaging. *Write for Bulletin No. 50 and details on Gurley Water Level Recorders.*

GURLEY

W. & L. E. GURLEY HYDRAULIC INSTRUMENTS DIVISION
TROY, N. Y.

Gurley—Since 1845

Obituaries

D. Ford McCormick, 69, mining consultant and member of the Oregon board of engineering examiners, died July 14 in Medford, Ore. Mr. McCormick received a degree in civil engineering at Union Texas in 1908 and degrees in mining and metallurgical engineering at Colorado School of Mines in 1920.

Dave Vrabel, Sr., founder and president of Steel Erectors Co., died in Cleveland, Ohio, on Aug. 18. Before forming his own company in 1952, Mr. Vrabel was associated with the Builders Structural Steel Co.

Arthur R. Gray, vice president and chief engineer of the Darkenwald Construction Co. of Sacramento, Calif., died Aug. 19 in Cheyenne, Wyo. He was 38.

Frank V. Fleckenstein, former building contractor in Rochester, N. Y., died Aug. 19 in Long Beach, Cal.

Dewey F. Kunde, former president of the Capitol Erecting Co., died Aug. 20 in Milwaukee, Wis.

Harry J. Williams, former Dayton, Ohio, architect, died Aug. 26 in Palm Springs, Calif. Among the buildings he designed in Dayton were the Hulman Buildings, Loews Theater, and the Winters & Third National Bank. Mr. Williams moved to California in 1936. He later formed the architectural firm of Williams, Williams, & Williams, with his two sons in Palm Springs.

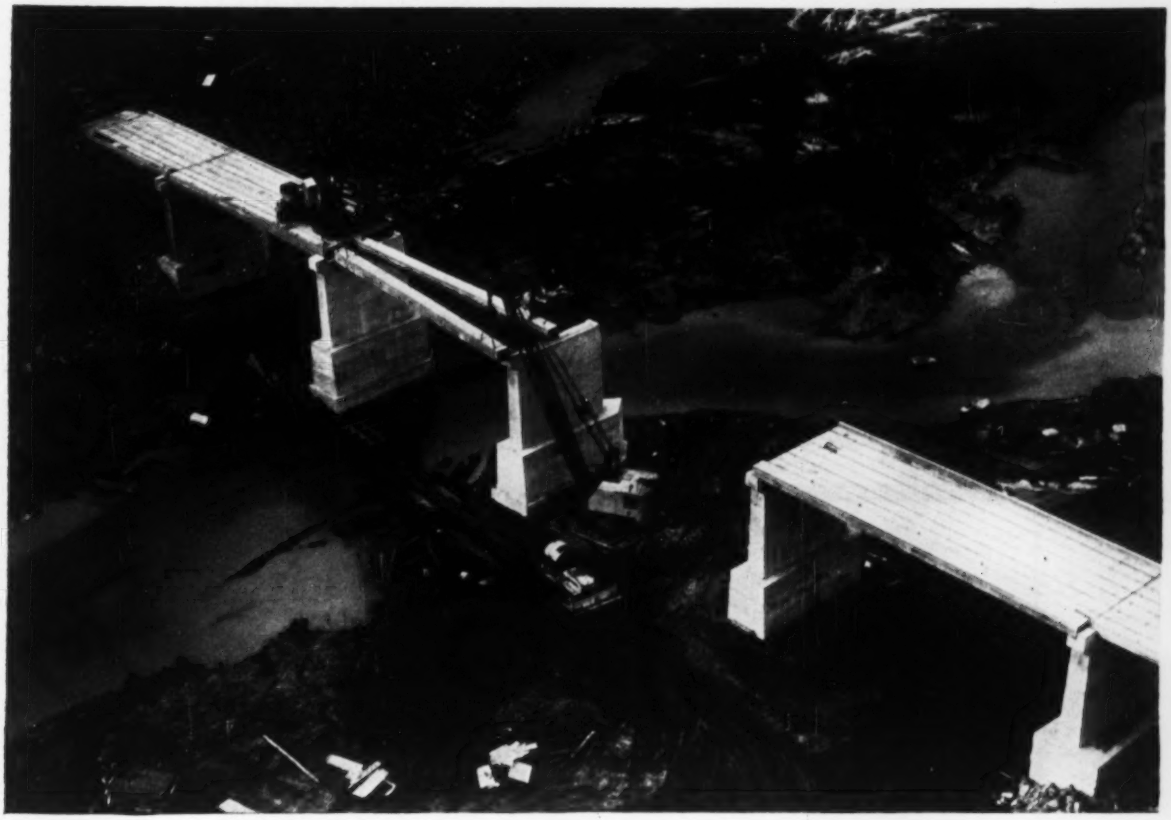
George G. Brown, 60, dean of the college of engineering of the University of Michigan, died Aug. 26 at Ann Arbor, Mich.

William H. Collisson, Jr., 70, city engineer of Ocean City, N. J., from 1918 to 1947, died there Aug. 26.

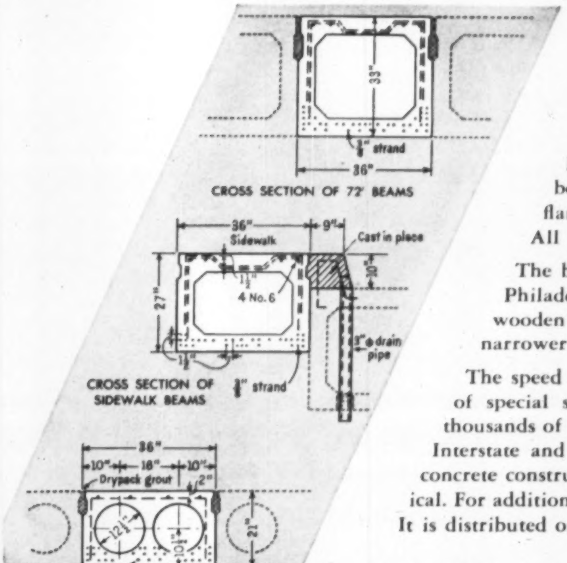
Fred F. Peterman, 69, architect-engineer, died Aug. 27 in Dallas, Tex. Mr. Peterman was in charge of the engineering department of Fritz W. Glitsch & Sons, Inc., of Dallas.

Benjamin E. Harris, 57, died Sept. 1 at Suffern, N. Y. He was vice president and a director of Ford, Bacon & Davis, New York engineering and construction company. Recently, Mr. Harris, who joined the company in 1923, had been supervising the company's engineering and economic studies in Pakistan.

(Obituaries continued on page 102)



379-ft. bridge deck erected in eight days using Precast, Prestressed CONCRETE



CROSS SECTION OF 72' BEAMS

CROSS SECTION OF SIDEWALK BEAMS

CROSS SECTION OF END SPAN BEAMS

By using precast, prestressed concrete beams it was possible to erect the deck of the 379-ft. Knight Road Bridge near Philadelphia in only eight days.

The beams were made on the prestressing beds of a casting yard ten miles away and trucked to the site. Each of the bridge's end spans is 45 ft. 3 in. long. Each of four interior spans is 72 ft. 2 in. long. Seven beams in each span form a 20-ft. roadway. An eighth flanking beam on one side serves as a 3-ft. sidewalk. All beams are pretensioned hollow girder design.

The bridge, spanning a newly-created reservoir of the Philadelphia Suburban Water Company, replaces an old wooden covered bridge. It was raised 24 ft. by adding narrower sections atop the old piers.

The speed with which this bridge deck was erected is of special significance to engineers in planning the thousands of bridges needed on the National System of Interstate and Defense Highways. Precast, prestressed concrete construction is not only fast but also economical. For additional information send for free literature. It is distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION
Dept. A9c-17, 33 W. Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Flintkote's answer to economical, long term protection of metal and masonry

HYDRALT* asphalt protective coatings are clay emulsions, reinforced within the film. Won't sag under heat. Won't get brittle or crack in cold. Will outlast any other form of bituminous coating exposed to weather.

They give best protection against moisture, corrosion, smoke and fumes. One coat of Hydralt is equal in thickness to many coats of paint. Stands up for years at lowest annual cost.

To restore old or leaky masonry buildings, protect with Hydralt. Give steel lasting protection with Hydralt. It is black, but if your finishing problem requires color a companion product... Decoralt ... is now available.

DECORALT†, a pigmented flexible latex base dispersion is designed to coat asphaltic materials and asphalt protected surfaces *in color* . . . red, green, white, cement gray, or variations.

It is weather resistant, opaque, full bodied . . . fortified with asbestos and minerals. Decoralt imparts desirable decorative finish over asphalt...wear resistant, too, over pavements.

Decoralt also seal coats masonry as a direct application for weather resistant, decorative finishing more durable than paints. Use it over concrete, cinder block, brick or stucco.

**Reg. U. S. Pat. Off.*

† A Trademark of The Flintkote Company

Get full information about Flintkote's effective waterproofing, corrosion proofing three coat system with color finish. Technical data sheets for these products are yours for the asking.

The Flintkote Company, Industrial Products Division, 30 Rockefeller Plaza
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FLINTKOTE INDUSTRIAL PRODUCTS

FLINTKOTE

Obituaries

James L. Lytel, 85, a retired civil engineer, died recently in Chula Vista, Calif. A graduate of the University of Nebraska, Mr. Lytel started his long government career for the U. S. Engineers in Cuba, and with the Mexican Central Railroad. From 1933 until his retirement in 1949, he was project engineer for the International Boundary and Water Commission in charge of the Lower Rio Grande flood project.

Sherman Van Olson, 54, died July 21 in Akron, Ohio. He was superintendent of the Weinstein Construction Co., and worked in Ohio, Pennsylvania, New York, Florida and Texas.

Dionigi Arrigoni, 77, one of Connecticut's most prominent road and bridge builders, died July 28 in Middletown. He headed the firm of D. Arrigoni & Sons which during the past 50 years has built roads and bridges in both New York and Conn. He also headed the Middletown Concrete Co.

Albert T. Bleck, 62, assistant state highway engineer of Wisconsin, died August 6. He started as a draftsman in 1919 after two years of railroad work following his graduation in civil engineering at Marquette University, rose to division engineer in 1934 and one year later was brought to the central office at Madison as construction engineer, a post he held until 1954.

William R. Martin, 61, regional industrial advisor for the International Cooperation Administration, with headquarters at the American Consulate in Calcutta, died August 16, in Manila, P. I. He specialized in steel and railway construction, directing projects for American Steel Foundries, Inc., in all parts of the world.

William A. Morton, 49, city engineer of Canon City, Colo., died Aug. 19. A native of Canon City, he held engineering degrees from New Mexico and Denver universities.

Harold W. Marsett, 57, civil engineer with the Vermont State Highway Department 36 years, died August 22, in Montpelier, Vt. A past president of the Vermont Society of Engineers, Mr. Marsett was a graduate of the University of Vermont, College of Technology.

Ora T. Easterday, 74, who retired in 1952 after 23 years of service with the California Division of Highways as a civil engineer, died August 22, in Sacramento, Calif.

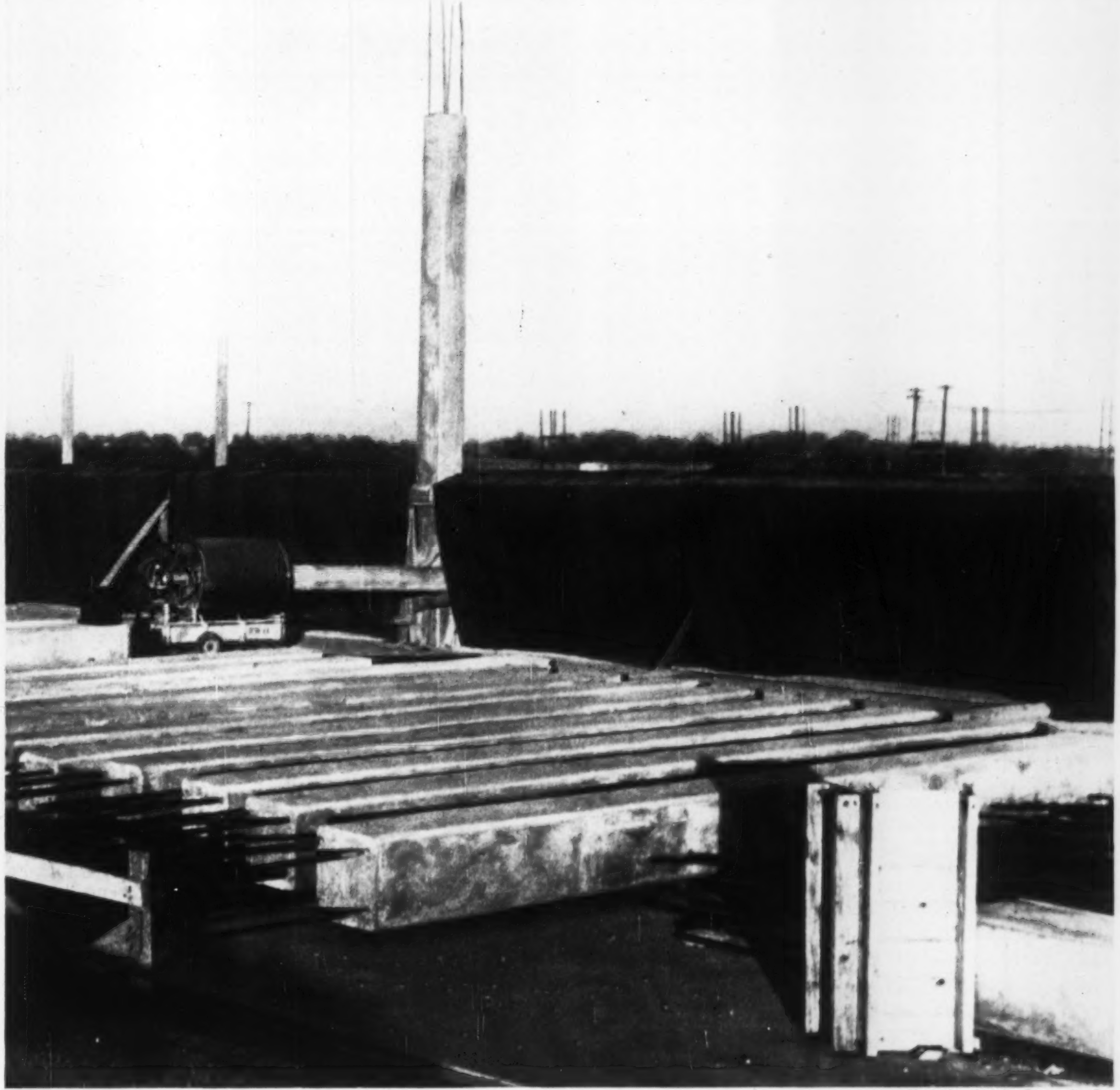

Photo by Hoosier Tarpaulin Co.

CANVAS KILN – When pre-stressed concrete was selected for the foundation of this giant new International Business Machines Corporation plant in Lexington, Kentucky, the builders were faced with the problem of finding a method to insure that the concrete would "cure" properly. This was especially critical, since all three buildings were being erected during the unsettled winter months. The Gilbane Building Company of Providence, R. I., contractors, solved the problem by utilizing 350 canvas tarpaulins. These were lashed together to form protective covers around the frame sections. As soon as the concrete had been poured, hot air was forced through the covers for a period of seven days. This weather-conditioning technique permitted the concrete to set evenly, regardless of weather. The tarpaulins used were manufactured by the Hoosier Tarpaulin and Canvas Goods Company of Indianapolis from Mount Vernon duck.

This is another example of how fabrics made by Mount Vernon Mills, Inc. and the industries they serve, are serving America. Mount Vernon engineers and its laboratory facilities are available to help you in the development of any new fabric or in the application of those already available.

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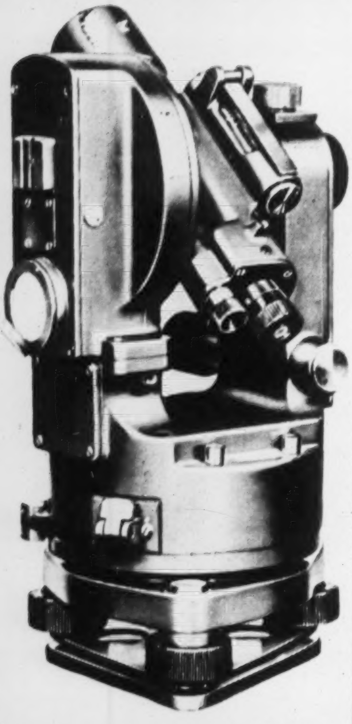

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- Horizontal circle reading direct to 30 seconds; vernier estimation to 10-15 seconds.
- 25X Telescope with 1.3 in. lens.
- Telescope Vial with mirror reader.
- Self-centering Vertical Axis.
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- Single-lever repetition control.

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FILOTECNICA
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41-14 24th STREET
LONG ISLAND CITY 1, N. Y.

Unit Prices

Three Michigan Bridges

This "normal job" for Michigan's State Highway Department includes three reinforced concrete T-beam bridges near Bay City along with the necessary excavation and drainage. Although bid separately, all three drew identical unit prices for respective items so quantities have been combined here to show the overall amounts with the prices shown only once.

Class A concrete is 1:2¼:3½ mix to test at 3,500 lb minimum modulus of rupture, psi 7 day 550, 14 day 600, 28 day 650. Cement per cu yd of concrete: dry 1.375 bbl per cu yd, med 1.475 bbl per cu yd.

Minimum wages take the zone 2E rate: carpenters $2.975, cement mason $3.00, truck drivers $2.45-2.65 (each of these goes up 10¢ on September 1) pile drivers $3.24, tractor operator $3.14 (each goes up 2¢ on September 1).

The bidding included:

1C	Walter Toebe & Co., Lansing, Mich	$307,598
2	L. A. Davidson, Lansing, Mich	329,726
3	A. T. Barnes Const Co., Cass City, Mich	347,777

Bids: 6-5-57		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Excavation, unclassified	cy	680	$4.00	$6.00
Piles, treated timber furn	lf	3,720	1.60	3.00
drive	lf	3,400	1.40	2.00
cutoff	ea	136	5.00	5.00
Concrete, substr gr A (6A)	cy	578.4	46.00	50.00
gr A (6B)	cy	531.2	48.00	50.00
gr A header	cy	48.0	48.00	50.00
superstr gr A (6B)	cy	1,211	70.00	77.00
Cement	bbl	3,531	4.00	4.50
Steel reinf	lb	350,930	0.12	0.12
Steel struct f&e	lb	57,900	0.30	0.40
Joint filler, ¾"	sf	60	1.00	2.00
hot-pour rubber tp	lf	210	1.50	2.00
Copper	lb	445	1.50	2.00
Bridge rail fe&p	lf	1,137.9	12.50	15.00
Rubbed surface finish	sf	21,340	0.45	0.44
Joint waterproofing	sf	570	1.00	1.00
Grouted flagstone paving	sy	840	7.00	7.00
Sand grav backfill, LM	cy	1,770	2.50	2.50
Excavation, earth	cy	36,000	1.25	1.00

* Quantities are combined here for all three bridges—unit prices are the same on each, small differences in quantities.

Reinforced Concrete Deck For Richmond Overpass

A contract for a reinforced concrete deck on concrete piers already in place, was awarded to Thorington Construction Co., Richmond, Va., for $1,469,000. Their bid was 1.1% under the second and 12.9% under the high bid. Parsons, Brinckerhoff, Hall & Macdonald, New York are consultants.

Bids on the main items were taken on a lump sum basis, but have been converted here to prices per lin ft of bridge. The overall contract price on this basis is $346.46.

This bridge crosses the James River in Richmond, Va. and overpasses railroad tracks and streets. It is 4,240 ft long and 90 ft wide with two 40 ft roadways, a 4 ft mall, and two walks. The deck is 7 in., class A, air entrained concrete.

The five bidders include:

1C	Thorington Const Co., Richmond, Va	$1,469,000
2	Booth & Flinn Co., Pittsburgh, Pa	1,485,432
5	Bowers Const Co., Raleigh, N. C. & T. A. Loving & Co., Goldsboro, N. C	1,684,588

Bids: 6-11-57		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Protect railroad traffic	ls	job	$3,000	$2,000
Bituminous material	gal	3,080	0.40	0.60
Cover agg rno. 9	t	132	5.00	12.00
Conc cl A, decks, parapets, safety walks, malls	lf	bridge	214.44	234.43
Steel reinf	lf	bridge	71.50	70.75
scuppers & gutters	lf	bridge	1.126	0.47
Stud shear connectors	lf	bridge	34.46	21.23
Aluminum bridge railing	lf	bridge	17.45	11.79
Cast iron scuppers	lf	bridge	0.844	0.708
Wrought iron drains	lf	bridge	5.05	9.43
Fence A1 chain link	ls	job	1,865	1,000

Work started: 7-1-57. To be completed: 90 calendar days following completion of steel erection
Liquidated damages: $1,000 per calendar day

Cleveland, Ohio Starts Downtown Airport

To be built over an old dump site, Cleveland's Lakefront Airport is for executive and small commercial planes.

Initial construction calls for a 4,000 ft runway and 5,000 ft taxiway consisting of 4 in. bituminous surface on a 12 in. stone base. Work includes 14,200 lin ft of 6 in. corrugated pipe drain and landscaping 100 acres.

Contract went to American Construction Co., Cleveland, Ohio, whose low bid beat the only other bidder by 25.8% and was under the engineer's estimate by 20%. Outcalt, Guenther and Associates, Cleveland, Ohio are the consulting engineers.

All stone and drain pipe will be furnished by the City of Cleveland.

Later the City will build an administration building and install runway lights to provide for night flying, also radar and radio equipment.

Minimum wage rates include $3.74 for carpenters, $2.625 to $3.125 for truck drivers, $3.415 for brush painters, and $3.765 for electricians.

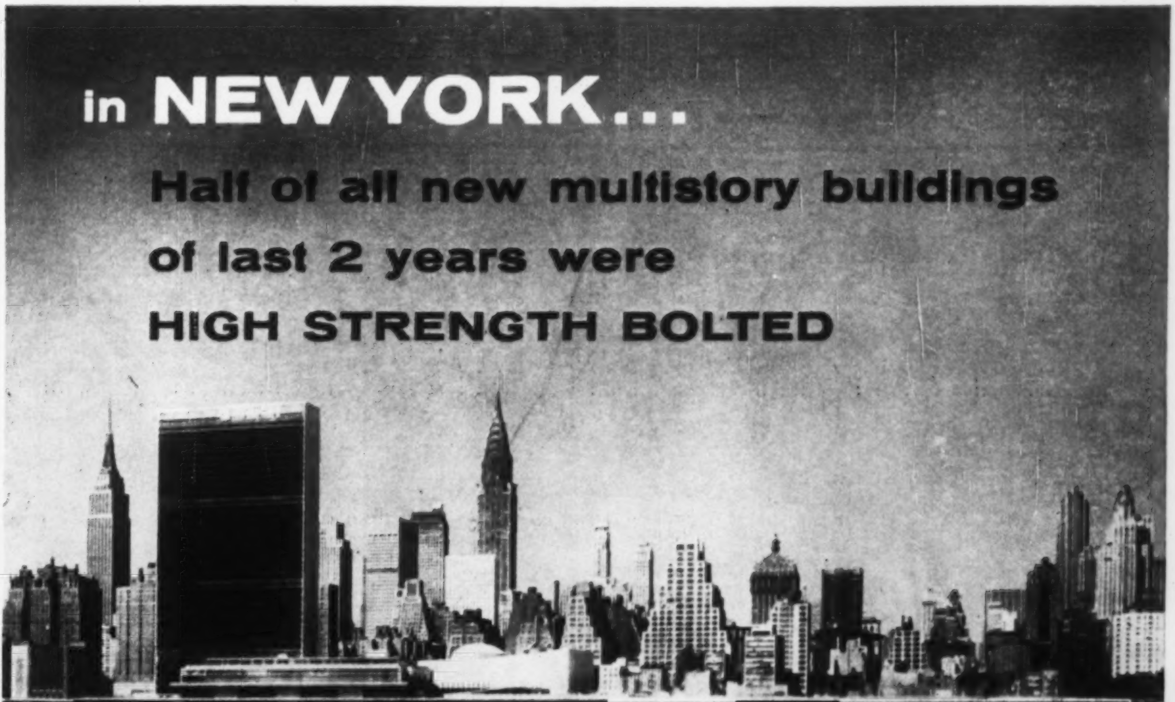
The two bidders are:

1C	American Const Co, Cleveland, Ohio	$400,500
2	Horvitz Company, Cleveland, Ohio	539,178
EE	Outcalt, Guenther & Assoc., Cleveland, Ohio	500,000

Bids: 7-5-57		Quan-	Unit Prices	
Items	Unit	tity	1C	2
Aggr base crse & runway surf dressing i	cy	15,500	$3.30	$4.80
CP underdrain, 6" i	lf	14,200	0.85	1.00
Porous bkfl over 6" underdrain	cy	2,600	6.85	8.50
Bituminous prime coat	gal	38,500	0.17	0.175
Penetrat macadam base crse, 2"	sy	77,100	0.86	1.25
Bituminous surf crse, 2"	t	8,250	9.00	11.30
Seal coat, bit matl	gal	23,000	0.17	0.17
cover aggr	t	770	6.25	6.00
Fill material	cy	10,000	0.67	1.00
Topsoil	cy	36,000	3.25	5.00
Seeding	ac	44.4	715.00	600.00
Paint striping	ls	job	600.00	650.00
Fiber conduits, 2-layer, 3"	lf	1,600	4.75	3.95

Completion Schedule: 8-15-57 to 12-15-57, 90 calendar days

BOLTED CONSTRUCTION IS "GOING UP" EVERYWHERE



in NEW YORK...

Half of all new multistory buildings of last 2 years were HIGH STRENGTH BOLTED

TALK about acceptance of a new technique in building erection! Of the 40 buildings over 125 feet high put up in the past 2 years in New York City alone...21 were erected with high strength bolts.

No question about the future. The advantages of high tensile bolts in construction are now too clear cut...too well established. They connect with more safety and less noise than rivets... more speed and less cost per ton of erected steel.

Two-man crews do the job, easily torquing bolts to proper tension. Structural members are clamped together so tightly, the connections are stronger in shear and in tension...stay permanently tight under all types of loads.

RB&W...largest independent producer of high strength bolts for construction

RB&W high tensile bolts have contributed in a big way to this building progress. They conform to ASTM A325 specifications. As verified by independent observers, the way RB&W manufactures these bolts assures the required quality consistently. They assure completely reliable service in buildings, bridges and equipment.

Users recognize RB&W High Strength Bolts also for their fine uniform appearance, clean threads and ease of assembling.

See RB&W catalog in Sweet's Industrial Construction File . . . or write for this "How to" bulletin. Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, New York.

RB&W

112th year

Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. **Additional sales offices at:** Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. **Sales agents at:** Milwaukee; New Orleans; Denver, Fargo. **Distributors** from coast to coast.

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Clay Products, Lime, Plaster, Paint, Roofing: Last Aug. 29: Next Sept. 26.
- Wage Rates, Building Board, Lath, Insulation: Last Aug. 29: Next Oct. 3.
- Cement Aggregates, Ready-mixed Concrete Asphalt: Last, Sept. 5; Next Oct. 10.
- Iron & Steel Products, Pine; Last Sept. 12: Next Oct. 17.

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F.O.B.

SOUTHERN PINE AND DOUGLAS FIR

All Southern Pine is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)

All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1. Lengths up to 20 ft. (Prices in italics)

LONG LEAF Y. P. Merchantable grade up to 20 ft.

PLYWOOD Rail freight increment (See note for base price)

		SOUTHERN PINE AND DOUGLAS FIR									LONG LEAF Y. P.		PLYWOOD	
		1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	2x12 Rgh	12x12 Rgh	⅝"	¾"
Atlanta	†	**$73.00**	**$76.00**	**$76.50**	**$79.00**	**$81.00**	**$86.00**	**$136.00**	......	......	**$121.00**	**$156.00**	$22.32	$27.24
Baltimore	*	**92.00**	**96.00**	**96.00**	**98.00**	**98.00**	**102.00**	**114.00**	......	......	**170.00**	**185.00**	25.92	31.60
		97.50g	*105.00g*	*123.00g*	*123.00g*	*123.00g*	*123.00g*	*133.00g*	*$144.00*	*$144.00*	......	......	......	......
Birmingham	†	**87.00**	**89.00**	**82.00**	**89.00**	**92.00**	**97.00**	**112.00**	......	......	**115.00**	**160.00**	21.78	26.58
		108.50	*108.50*	*105.00*	*108.00*	*108.00*	*113.00*	*111.50*	*108.50*	*108.50*	......	......	......	......
Boston	*	**98.00f**	**98.00f**	**106.00f**	**106.00f**	**106.00f**	**115.00a**	......	......	......	......	......	25.92	31.60
		96.00k	*96.00k*	*113.00*	*113.00*	*113.00*	*119.00*	*124.00*	*129.00*	*133.00*			......	......
Chicago	**	**94.00**	**97.00**	**91.00**	**105.00**	**113.00**	**114.00**	**109.00**	......	......	**137.00**	**137.00**	22.45	27.37
		104.00	*104.00*	*117.00*	*115.00*	*115.00*	*116.00*	*124.00*	*124.00*	*124.00*			......	......
Cincinnati	*	**96.00**	**97.25**	**87.00**	**93.25**	**98.00**	**106.00**	**119.50**	......	......	**143.75**	**141.75**	25.00	30.48
		100.25	*101.50*	*106.00*	*108.00*	*109.00*	*112.50*	*134.00*	*134.00*	*134.00*	......	......	......	......
Cleveland	**	**92.00**	**93.00**	**97.00**	**95.00**	**95.00**	**95.00**	......	......	......	......	......	25.37	30.93
			......	*114.00*	*106.00*	*106.00*	*106.00*	*136.00*	*136.00*	*136.00*	......	......	......	......
Dallas	k‡	**70.00**	**70.00**	**65.00**	**65.00**	**65.00**	**70.00**	**140.00**	......	......	**136.00**	**130.00**	18.72	22.80
Denver	*	*Not in stock*		*122.50*	*122.50*	*122.50*	*127.00*	*141.50*	*148.50*	*153.80*	......	......	13.92	16.98
Detroit	‡	**116.50**	**119.50**	**114.00**	**117.00**	**122.00**	**122.00**	......	......	......	**130.00**	......	25.00	30.48
		125.00	*125.00*	*130.00*	*132.50*	*130.00*	*135.00*	*185.00*	*195.00*	*195.00*	......	......	......	......
Kansas City	3	**120.00**	**120.00**	**120.00**	**120.00**	**125.00**	**135.00**	......	......	......	......	......	16.56	20.16
		120.00	*120.00*	*120.00*	*120.00*	*125.00*	*130.00*	*150.00*	*225.00*	*225.00*			......	......
Los Angeles	1	*95.00*	*95.00*	*95.00*	*95.00*	*95.00*	*95.00*	*119.00*	*130.00*	*130.00*	......	......	16.61ab	20.25ab
Minneapolis	#	*135.00m*	*135.00m*	*140.00*	*140.00*	*140.00*	*140.00*	*185.00*	*185.00*	*185.00*	......	......	19.80	24.25
Montreal	ab	**92.00**	**100.00**	**92.00**	**93.00**	**110.00**	**128.00**	......	......	......	**125.00**	**125.00**	......	......
		178.00	*178.00*	*178.00*	*178.00*	*178.00*	*178.00*	*171.00*	*171.00*	*171.00*	......	......	......	......
New Orleans	†	**87.00**	**87.00**	**94.00**	**91.00**	**90.00**	**97.00**	**121.50**	......	......	**181.00**	**181.00**	18.72	22.80
	†	*110.00*	*110.00*	*104.50*	*120.00*	*120.00*	*120.00*	*132.50*	*132.50*	*152.50*	......	......	......	......
New York	3	**108.00**	**109.00**	**115.00**	**117.00**	**117.00**	**121.00**	...	......	......	**240.00**	**255.00**	25.92	31.60
		......		*117.00*	*120.00*	*121.00*	*122.00*	*165.00*	*165.00*	*165.00*	......	......	......	......
Philadelphia	‡		**Range from 109/129**				**112/132**	**133/155**	......	......	**214/224**	**214/224**	28.00	32.00
			Range from 120/150				*131/168*	*136/158*	*165.00*	*165.00*	......	......	......	......
Pittsburgh	2	**130.00**	**130.00**	**125.00**	**125.00**	**130.00**	**135.00**	......	......	......	**180.00**	......	25.92	31.60
		140.00	*140.00*	*145.00*	*140.00*	*145.00*	*145.00*	*180.00*	*200.00*	*210.00*	......	......	......	......
St. Louis	#	**118.00**	**120.00**	**128.00d**	**128.00d**	**128.00e**	**133.00e**	......	......	......	......	......	18.72	22.80
		......	......	*137.00*	*137.00e*	*137.00e*	*141.00e*	*195.00e*	*195.00*	*195.00*	......	......	......	......
San Francisco	†	*73.00*	*73.00*	*80.00*	*82.00*	*80.00*	*80.00*	*105.00*	*115.00*	*115.00*	......	......	12.22	14.91a
Seattle	†	*67.00*	*72.00*	*73.00*	*73.00*	*73.00*	*74.00*	*85.00*	*90.00*	*90.00*	......	......	......	......
Toronto	a	**91.00**	**95.00**	**90.00**	**91.00**	**91.00**	**91.00**	......	......	......	**93.00**	......	......	......
		114.00	*114.00*	*120.00*	*122.00*	*126.00*	*130.00*	*145.00*	*140.00*	*150.00*	......	......	......	......

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. # Retail, LCL, deliv. 2. Deliv. truck lots. 3. s4s., truckload lots, 8/6 Mftbm

LUMBER: Bold Face Type, Southern Pine. Italics, Douglas Fir. *a Spruce. *b Tax exempt. *c 5M lots. *d 8, 10, & 12 ft. lengths. *e 8 to 16 ft. lengths. *f Hemlock *g No. 1 common. *j 8 ft. lengths. *k No. 3 common. *l incl rail rate from North west mills to San Francisco are $11.50 to $15.00 per M ft. bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock. For rough, add $3.00 to above figures. *m Up to 16"

PLYWOOD (Plyform, oiled and edge sealed): Douglas fir, 4' x 8' panels, 5-ply sanded 2 sides, carload lots, delivered per 1000 sq. ft. surface. Seattle base price, Interior, moisture resistant, ⅝", $146.00; ¾", $166.00. Exterior, waterproof, ⅝" $150.00; ¾", $170.00. For other centers add rail freight increment from table on proper size. *a Lower rate by water shipment. *b 50,000 lbs. minimum.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS		EXPLOSIVES
	Discounts from jobbers list, Feb. 1, 1950a Single or Double Strength A quality	B quality	Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
Atlanta	78%c	78%e	$0.2615
Baltimore	74%d	76%d	.2615
Birmingham	82%	83%	.2065
Boston	72-10%	72-10%	.2615
Chicago	72%	72%	.2615
Cincinnati	74%	74%	.2615
Cleveland	74-2-10%	74-2-10%	.3015
Dallas	76%	76%	.2690
Denver	73%	73%	.2665
Detroit	74-10-10%	74-10-10%	.2615
Kansas City	76-10-10%	76-10-10%	.2665
Los Angeles	70%	76%e	.2640
Minneapolis	71-10%	71-10%	.2665
Montreal	40-10-5%bc	40-10-5%b	22.05h
New Orleans	75%	76%	.2665
New York	79-10%	79-10%	.45g
Philadelphia	74-10%	76-10%	.2615
Pittsburgh	72%	72%	.2615
St. Louis	72-10-10%	72-10-10%	.2665
San Francisco	60%-25%	68%-25%	.2615
Seattle	67%	72%	.2640

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U. S., $1.75 per 100 lbs. higher in Canada.

Glass: *a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b sales tax extra. *c 77% for single strength. *d Discount 6/15/52. *e 77% for double strength

Explosives: * Cartridges of 1¼", 1½", 1¾", 2", 2¼", 2½", 3" diameters. Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. *h F.o.b Beloeil (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $23.80

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.2065	$0.2465	$0.2615
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.2115	.2515	.2665
Rocky Mtn. States	.2115	.2515	.2665
Pacific N. W. States	.2090	.2490	.2640
Pacific S. W. States	.2065	.2465	.2615

PILES, TIES F.O.B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in.—2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in.—2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in.—2-ft. from butt	6-in.	90 to 100-ft.	.....	....
13-in.—3-ft. from butt	5-in.	91 to 100-ft.	....	....
14-in.—2-ft. from butt	6-in.	50 to 69-ft.	.50/68	....
14-in.—2-ft. from butt	6-in.	70 to 79-ft.	.78/.88	.93
14-in.—2-ft. from butt	5-in.	80 to 85-ft.	.83/93	.94
14-in.—2-ft. from butt	5-in.	85 to 89-ft.	....	1.00
14-in.—2-ft. from butt	5-in.	90 to 100-ft.	....	1.03

* Pine piling over 80-ft. available only in limited quantities

RAILWAY TIES

Prices f.o.b. per tie for carload lots:

		6" x 8" x 8'		7" x 8" x 8'6"	
		Untr.	Tr.	Untr.	Tr.
Birmingham*	Hardwood, Grade 3	$1.70	$2.55	Gr. 5 $2.25	$3.33
	Grade 2	1.50	2.35	" 4 2.10	3.18
	Grade 1	1.15	2.00	" 3a 1.70	2.78
Chicago	Red Oak	.....	4.15a	.....	4.75a
New York	S. L. Sap Pine	2.00d	4.00d	3.00g	6.00g
	Mixed Oak	2.50d	4.50d	3.50g	6.50g
Philadelphia	Red Oak	2.95/3.15	4.50/4.70	3.60/3.80	5.50/5.75
St. Louis	White Oak	2.65	.....	2.95h	.....
	Red Oak	2.55	3.40a	2.80h	3.60a
San Francisco	Douglas Fir	2.03ef	2.96ef	2.84bef	4.31caf

Tr.—Treated; Untr.—Untreated. a Creosoted. b 7" x 9" x 8'. c Empty cell d 6 x 8 x 8'6" e Green. f f.o.b. cars. g 7 x 9 x 8'6" * Add 75¢/tie freight charge to Birmingham. *h 7" x 9" x 8½" g

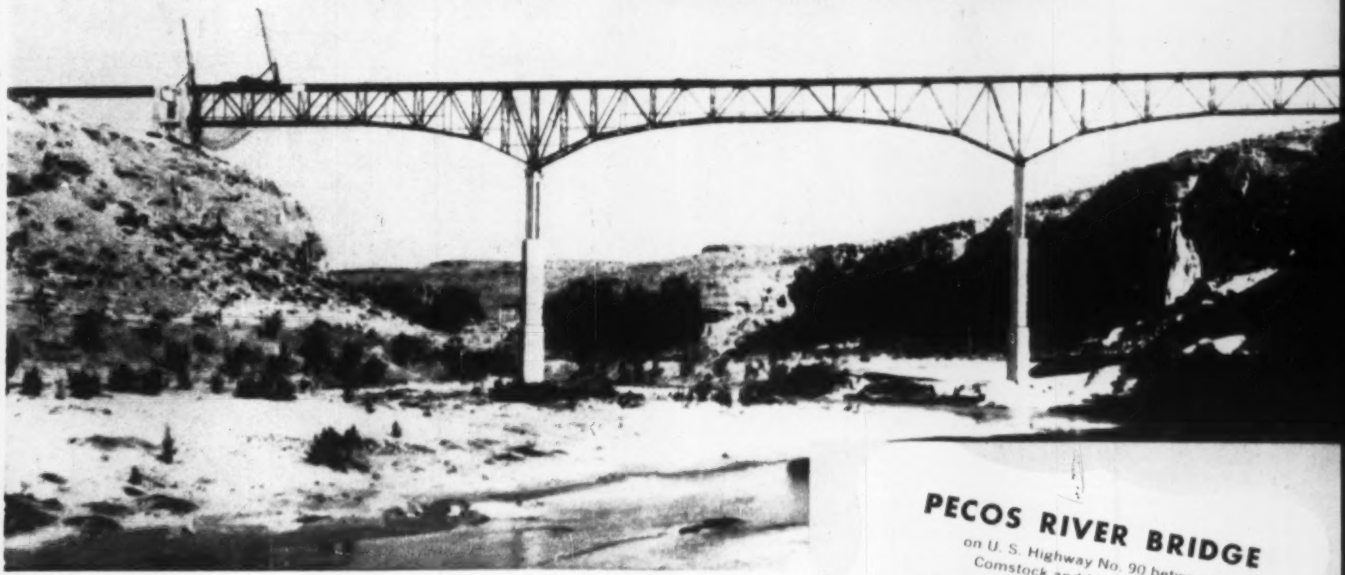
CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.103
Calcium chloride, 77-80%, flaked, 100-lb. paper bag, f.o.b. works, ton	29.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb	2.30
Soda ash, 58%, in paper bags, per 100 lb. dense	1.70
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.85
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	14.90

UNPREDICTABLE PECOS

meets its match at last



PECOS RIVER BRIDGE

on U. S. Highway No. 90 between
Comstock and Langtry, Texas

Designed by Texas Highway Department

General Contractor:
Whittle Contracting Company, Dallas

Steelwork Fabricated and Erected by
American Bridge

New Texas Highway Bridge spans canyon 272′ above troublesome river to permanently end washout threat

ANOTHER CHAPTER in the history of Texas is being written with the completion of the spectacular new Pecos River Canyon Bridge.

The long, high span (the highest vehicular bridge in Texas) is on U.S. Route 90, between Comstock and Langtry and near one of the state's most famous landmarks—the "Jersey Lily," combination saloon, billiard hall, and courtroom from which that colorful old character of the 1880's, "Judge" Roy Bean, dispensed the "Law West of the Pecos."

Stretching 1,300′ from rim to rim of the deep, rugged gorge, 272′ above the canyon floor, the long continuous deck truss bridge replaces a 30-year-old, 54′-high structure which was swept away several years ago, and its low-bridge replacement which was also washed out.

Because of its height, design and construction, the new bridge should forever end the danger of future washouts. The bridge involved the fabrication and erection of 1,195 tons of structural steel, consisting of a 1,040′ continuous deck truss unit made up of three sections—two side spans each 312′ long and a center span 416′ long. At one end, a 240′ continuous welded deck plate girder unit forms the approach. It provides a 28′ roadway.

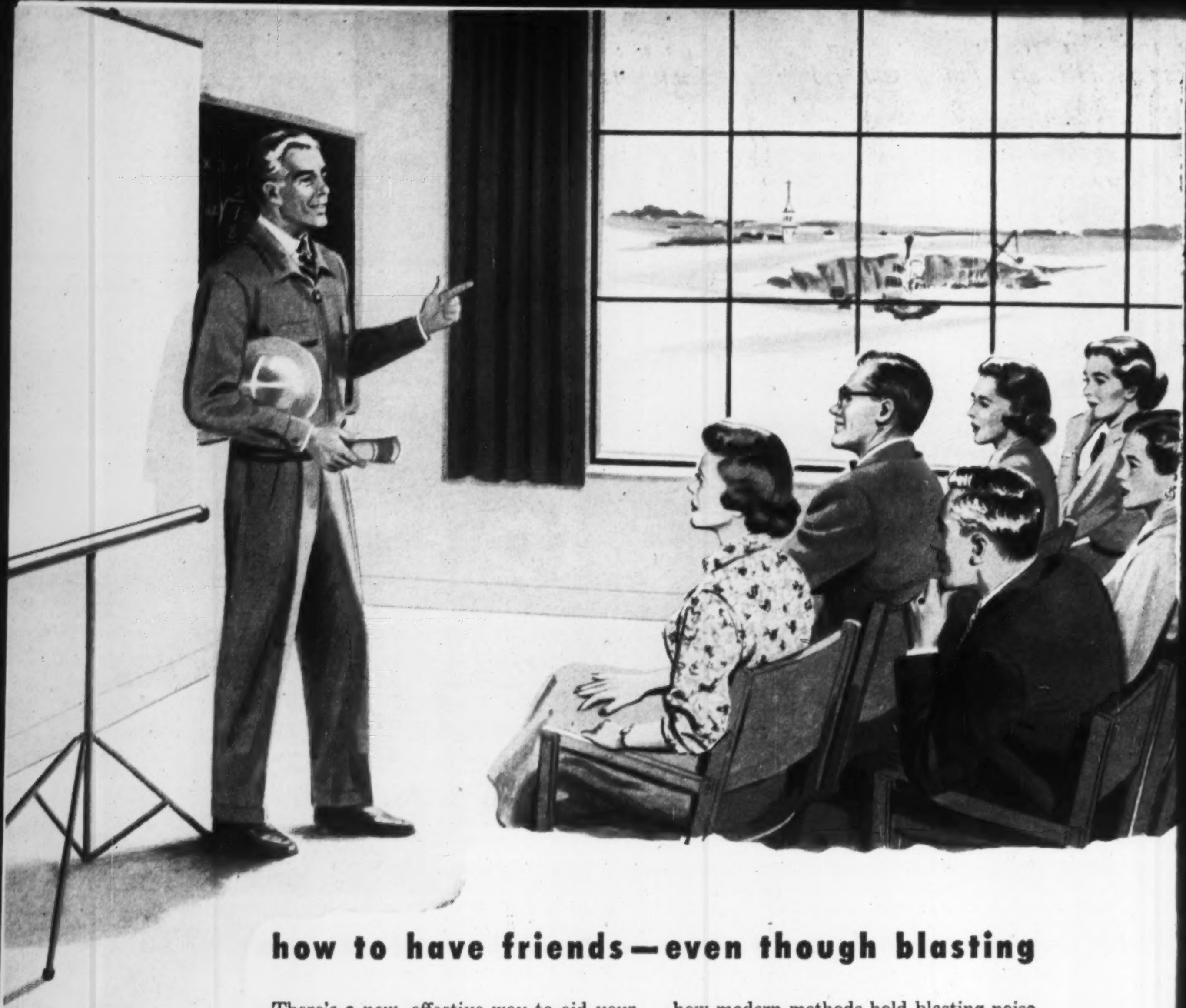
For detailed information regarding your requirements, please contact the office nearest you.

American Bridge Division, United States Steel Corporation · General Offices: 525 William Penn Place, Pittsburgh, Pa. · Contracting Offices: Ambridge · Atlanta
Baltimore · Birmingham · Boston · Chicago · Cincinnati · Cleveland · Dallas · Denver · Detroit · Elmira · Gary · Houston · Los Angeles · Memphis
Minneapolis · New York · Orange, Texas · Philadelphia · Pittsburgh · Portland, Ore. · Roanoke · St. Louis · San Francisco · Trenton
United States Steel Export Company, New York

AMERICAN BRIDGE

USS TRADE MARK

UNITED STATES STEEL



how to have friends—even though blasting

There's a new, effective way to aid your public relations in communities where you are blasting. It's the interesting, informative sound film, in color, entitled, "*We're Blasting Near You.*"

When you show this film to PTA meetings, service clubs and other civic organizations, you can prove that you're a good neighbor . . . that blasting, while necessary, is nothing for people to be alarmed about.

"*We're Blasting Near You*" shows how modern millisecond delay techniques eliminate old-fashioned, jarring explosions . . . how modern methods hold blasting noise to a muffled minimum, and make vibration unnoticeable. In a friendly, noncommercial way, the movie shows your efforts to be a good citizen in the community.

You can show this movie to any age group. It is accompanied by a kit containing news releases, sample speeches, safety posters and other helpful material which will make your public relations meeting a success. Write for available dates, and show "*We're Blasting Near You*" in your community!

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Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, S. N. NOLAN, Reports
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

CONNECTICUT—BA 9/23—State Hy. Comn., 165 Capitol Ave., Hartford,

Windsor Locks Proj. 165-67, approx. 1,545 lin. ft. bit. macad. pavement, Half-Way House Road, Town Aid. Plans deposit $2.97.

† **Massachusetts** BA 9/25—U. S. Eng., 150 Causeway St., Boston, Zone 14, imprvt. dredging in Newburyport Harbor, Serial No. CIVENG-19-016-58-21. CD 4/16.

Mass., **Boston** — BA 9/25 — Commonwealth of Mass., Metropolitan Dist. Comn., Parks Div., 20 Somerset St., reconstr. bridge, Ipswich St. and over Boston & Albany R.R. tracks, Charlesgate West. $74,000. Plans deposit $2.

BUILDINGS—BA

Conn., **Stamford** CHURCH—BA 9/25—Greek Orthodox Church of Archangels, 434 Elm St., church. $345,000. W. Stuart Thompson, 250 Park Ave., New York, N. Y., archt. CD 3/26.

† Conn., **New London** RECREATION—BA 9/26—Dist. P. Wks., Third Naval Dist., Federal Office Bldg., 90 Church St., New York 7, N. Y., enlisted men's recreation bldg. addn., U. S. Naval Submarine Base, NBy 12034, Spec. 12034/57. Plans deposit $25.

▲ Mass., **Marshfield** SCHOOL—BA 10/4—Town, Ellis Randh, chn. Comn., c/o Supt. Schools, New St., high school, Plain and Forest Sts. $1,685,000. Plans deposit $100. Haldeman & Jacoby, 153 Main St., Brockton, archts. CD 10/29.

BUILDINGS—SLC

▲ Mass., **Boston**—TELEPHONE—New England Telephone & Telegraph Co., 185 Franklin St., soon lets contract telephone building top story addn. and Aadie Relay Tower, $1,000,000. Hoyle, Doran & Berry, 248 Boylston St., archts.

Mass., **North Easton**—STUDENT UNION—Foundation of Our Lady of Holy Cross, Inc., Stonehill, soon lets contract Proj. Mass. 19-CH-13 (S) student union bldg. for Stonehill College. $350,000. Emery J. Laliberte, 53 Moraine St., Brockton, archt. CD 4/30/56.

HEAVY CONSTRUCTION—LB & CA

Eilis C. Snodgrass Inc., 465 Congress St., Portland, Me., CA **$94,155**, est. $100,000. repair State Pier, PORTLAND, ME. Maine Port Auth., 40 Commercial St., Portland, Me. CD 8/21, under LB.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

J. F. White Constr. Co. 781 Circle Hy. Westwood, Mass., LB **$4,561,234**, est. $5,483,641, Section 6, Southeast Expressway, Braintree and Weymouth. Bids Sept. 4. CD 8/23.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Suburban Excavators, Inc., 41 New Salem St., Wakefield, Mass. and **Consolidated Builders, Inc.**, Draper Ave., North Attleboro, Mass., CA **$2,614,374**, relocation of Route 28, Andover. Bids July 30. CD 8/1, under LB.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Central Constr. Co., 79 Beacon Ave., Lawrence, Mass., LB **$271,479**, est. $333,714, hy. work Route 128 on streets and ramps, U-31 (2) Peabody. Bids Sept. 4. CD 8/29.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 9/4,

Manning Constr. Co., 26 Manning Rd., Dedham, Mass., LB **$248,102**, Chapter 90 hy. work, Blue Hill Ave., Boston. CD 8/21.

P. J. Riley & Co., 295 Highland St., Boston, Mass., LB **$405,480**, est. $450,000. new oxygen and suction systems, new central hot water system and renewal cold water systems for city hospital, BOSTON, MASS. City Bd. Trustees, City Hall, 818 Harrison Ave., Boston, Mass. J. M. McCusker Assoc., 17 Chestnut Ave., Jamaica Plains, engr. CD 5/31/56, under Public Buildings.

Gerard Leone, 510 North Ave., Weston, Mass., LB **$142,500** Alt. No. 1, est. $100,000, field house and recreational facilities, Carter St. Playground, CHELSEA, MASS. Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids Sept. 4. CD 8/26.

Brooks School, 1760 Great Pond Rd., North Andover, Mass. Separate Contracts. Approx. **$120,000**. indoor skating and hockey rink, NORTH ANDOVER, MASS. American Carbonic Eng. Co., 551 Fifth Ave., New York, N. Y., engrs.

Susi & DeCenzo, 60 Olney St., Dorchester, Mass., CA **$132,792**. water mains and standpipe foundations, PEABODY, MASS. City, City Hall, Peabody, Mass. Bids Aug. 8. CD 8/15, under LB.

RHODE ISLAND—State R. I. & Prov. Plants, Div. Purchase, State House, Providence,

A. Forte & Sons, 14 Whipple St., Cumberland, R. I. LB **$93,188**, est. $95,000, Bid No. 187, Contr. No. 5710, hy. and bridge, Dexter St., Providence. CD 3/23/44.

CONNECTICUT—State Hy. Comn., 165 Capitol Ave., Hartford,

Union Metal Mfg. Co., 1432 Maple Ave. N.W., Canton, O., CA **$167,328** (2 bidders) sign supports and sign brackets assemblies, Connecticut Turnpike, Greenwich to Killingly. Awarded Sept. 4.

† **Donoghue & Bartles Inc.**, 26 Garden St., Arlington 74, Mass. CA **$126,398** Lot A; CA **$76,661** Lot B; CA **$56,786** Lot C, floodwall imprvs. Measures, Northampton, Chicopee and Holyoke, Mass. and Hartford along Connecticut River, Conn., ENG-19-016-58-1, CONNECTICUT. U. S. Eng., 150 Causeway St., Boston, Mass. Bids July 26. CD 8/19. under LB.

Savin Bros., Inc., 410 Asylum St., Hartford, Conn. CA **$792,424**, toll plazas and toll plaza buildings. Founders and Bulkeley Bridges, East Hartford, HARTFORD, CONN. Greater Hartford Bridge Auth., 70 Capitol Ave. Hartford, Conn.. Bids Aug. 15, awarded Sept. 4. CD 8/26, under LB.

Seminole Constr. Co., 12 Devens St., East Hartford, Conn., LB **$130,868** (9 bidders) Contr. 57-18, 7,000 ft. 8- to 30-in. trunk and local sanitary sewers in Silas Deane Hy. from vicinity. Marshall Rd., Rocky Hill to Maple St., Wethersfield, HARTFORD, CONN. Metropolitan Dist., Bd. Contr. & Supply, 115 Broad St., Hartford, Conn. Bids Sept. 5. CD 8/28;

Martin & Zanke Co., Inc., 215 Main St., Rocky Hill, Conn., LB **$79,642** (11 bidders) Contr. 57-19, 5,560 ft. 10- to 33-in. trunk and local sanitary sewers in Silas Deane Hy. from vicinity of Marshall to Parsonage Rds., Rocky Hill (Hartford, Conn.).

BUILDINGS—LB & CA

▲ **M. S. Kelliher Co.**, 294 Washington St., Boston, Mass., CA Approx. **$1,000,000**. 75,000 sq. ft. THEOLOGY HOUSE addn., BRIGHTON, MASS. St. John's Seminary, c/o Chancery Office, 1 Lake St. Brghton, Mass. Bids June 14. CD 6/12.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: **Before and including appointment of engineers or architects.**

BIDS ASKED: BA **(new announcements only). For full calendar, see also preceding issues.**

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB **On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.**

CONTRACTS AWARDED: CA **Except awards to low bidders previously reported in low bidder stage.**

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS **are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.**

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

▲ **M. S. Kelliher Co.**, 294 Washington St., Boston, Mass., LB **$2,048,960**, est. $2,078,000. ADMISSION and TREATMENT BLDG. State Hospital, FOXBORO, MASS. Commonwealth of Mass., Dpt. Mental Health c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. Bids Sept. 6. CD 8/14.

Charles Constr. Co., 129 Merrimack St., Methuen, Mass., CA **$161,000**. PLANT Addn., Goodall-Sanford Plant Ash St., READING, MASS. Burlington Industries, Greensboro, N. C. CD 8/15, under CA.

▲ **Francis S. Harvey & Son, Inc.**, 141 Dewey St., Worcester, Mass. LB **$1,299,087**. 19-CH-20 (DS), DORMITORY and DINING HALL, WORCESTER, MASS. Worcester Polytechnic Institute, Institute Rd., Worcester, Mass. Bids Sept. 5. CD 8/29.

R. L. Whipple Co., 44 Portland St., Worcester, Mass., CA **$350,000**. SCHOOL. Holden St. and Shore Dr., WORCESTER, MASS. Bancroft School, 61 Sever St., Worcester, Mass. Bids Aug. 14. CD 8/8.

▲ **Louis Beckenstein**, 95 Haynes Rd., West Hartford, Conn., CA **$1,028,475**, 45 HOUSES, third section "Laurel Park", BLOOMFIELD, CONN. Green Acres, Inc., 139 Wintonbury Ave., Bloomfield, Conn. Awarded Sept. 6. CD 12/12/55.

▲ **Standard Builders, Inc.**, 55 Airport Rd., Hartford, Conn., CA **$1,286,660**, LABORATORY addn., Wilgoos Turbine Laboratory, Pent Rd., EAST HARTFORD, CONN. **Pratt & Whitney Aircraft**, 400 Main St., East Hartford, Conn. Awarded Sept. 5. CD 9/6.

Robert M. Stone Assocs., Old May Rd., East Hartford, Conn. Owner Builds. **$748,000**. 44 HOUSES, "Stonehenge" Old May Rd., EAST HARTFORD, CONN.

Brooklawn Constr. Co., 254 Prospect Ave., Hartford, Conn., CA **$400,000**. 3 level BUSINESS BLDG., off-street parking, 633 Farmington Ave., HARTFORD, CONN. John E. Hayes, 248 Farmington Ave., Hartford, Conn. Awarded Sept. 5.

▲ **Sol & Lester Entin**, 663 Main Ave., Passaic, N. J., CA **$1,200,000**. glass mfg. PLANT, KILLINGLY, CONN. Danielson Development Corp., Town Hall, 127 Main St., Danielson, Conn. Knox Glass, Inc., Knox, Pa., lessee. CD 7/8, under Industrial Buildings, Knox Glass, Inc. as owner.

Green Manor Estates, Inc., West Middle Turnpike, Manchester, Conn., CA **$350,000**, brick, glass, seats on one floor, THEATRE, "Parkade Cine", Manchester Parkade, West Middle Turnpike, MANCHESTER, CONN. Bernard Menschell, 41 Milford Rd., Manchester, Conn.

John C. Smith, Inc., 28 Baldwin Ave., New Canaan, Conn., CA **$350,000**, CHURCH, NEW CANAAN, CONN., Methodist Church of New Canaan, 210 So. Main St., New Canaan, Conn. Awarded Sept. 4.

Bonvicini Bldg. Co., Inc., 1500 S. Main St., Torrington, Conn., LB **$678,000** (11 bidders) Pleasant Valley Elementary SCHOOL, SOUTH WINDSOR, CONN. Town, Town Hall, South Windsor, Conn. Bids Sept. 5. CD 8/30.

Frank Mercede & Son, 72 Little Hills Dr., Stamford, Conn., CA **$95,000**. GARAGE, Broad St., STAMFORD, CONN. Stamford Redevelopment Corp., City Hall, Stamford, Conn. Paul Sternbach, 305 Atlantic St., Stamford, Conn., archt. Awarded Sept. 5.

Frank Mercede & Son, 72 Little Hills Dr., Stamford, Conn., CA **$345,000**. HEALTH CENTER, North St. exten., STAMFORD, CONN. City, City Hall, Stamford, Conn. W. J. Provost, 421 Main St., Stamford, Conn., archt. Awarded Sept. 5.

Regal Builders, Inc., Matinuck Ave., Windsor, Conn. Owner Builds. **$412,280**. 22 HOUSES "Coronet Homes", Matinuck Ave., WINDSOR, CONN.

▲ **Glenwood Homes, Inc.**, 750 Main St., Hartford, Conn. Owner Builds. **$2,013,000**. 132 HOUSES, "Northridge", North St., WINDSOR LOCKS, CONN.

▲ **Wadhams & May Co.**, 15 Lewis St., Hartford, Conn., LB **$1,800,900** (3 bidders) HIGH SCHOOL, AUDITORIUM, GYMNASIUM, baseball and football fields, WINSTED, CONN. Town of Winchester, Gilbert School Trustees, Park Pl., Winsted, Conn. Bids Aug. 22. CD 8/9.

MIDDLE ATLANTIC

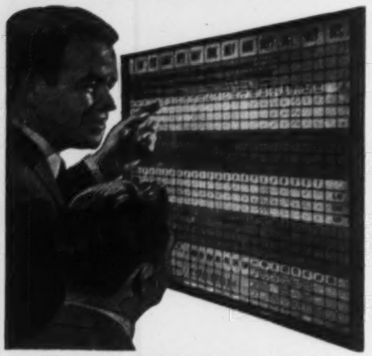
HEAVY CONSTRUCTION—BA

New York—BA 9/24—Power Auth. of the State of New York, W. S. Chapin, genl. mgr., The Coliseum Tower, 10 Columbus Circle, New York, Zone 19, Contr. T3, Plattsburgh Sub-station and the Kents Falls sub-station both near Plattsburgh, Clinton Co., Spec. PA-6-40. Plans deposit $25. CD 8/18/54.

NEW JERSEY—BA 9/26—N. J. Hy. Auth., John B. Townsend, secy., Red Bank,

Middlesex Co.—imprv. South Bound Roadway and stabilization of shoulders on North and South Approaches to Raratan River Bridge in Sayreville Borough, Woodbridge Twp., Garden State Parkway, Contr. No. 324, Sect. No. 7. Plans deposit $5.

(Continued on page 112)



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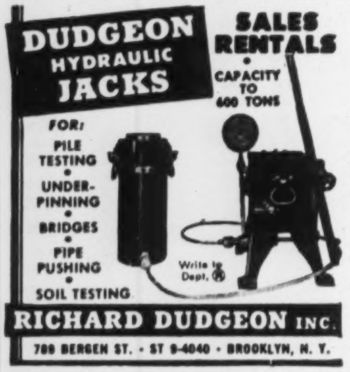

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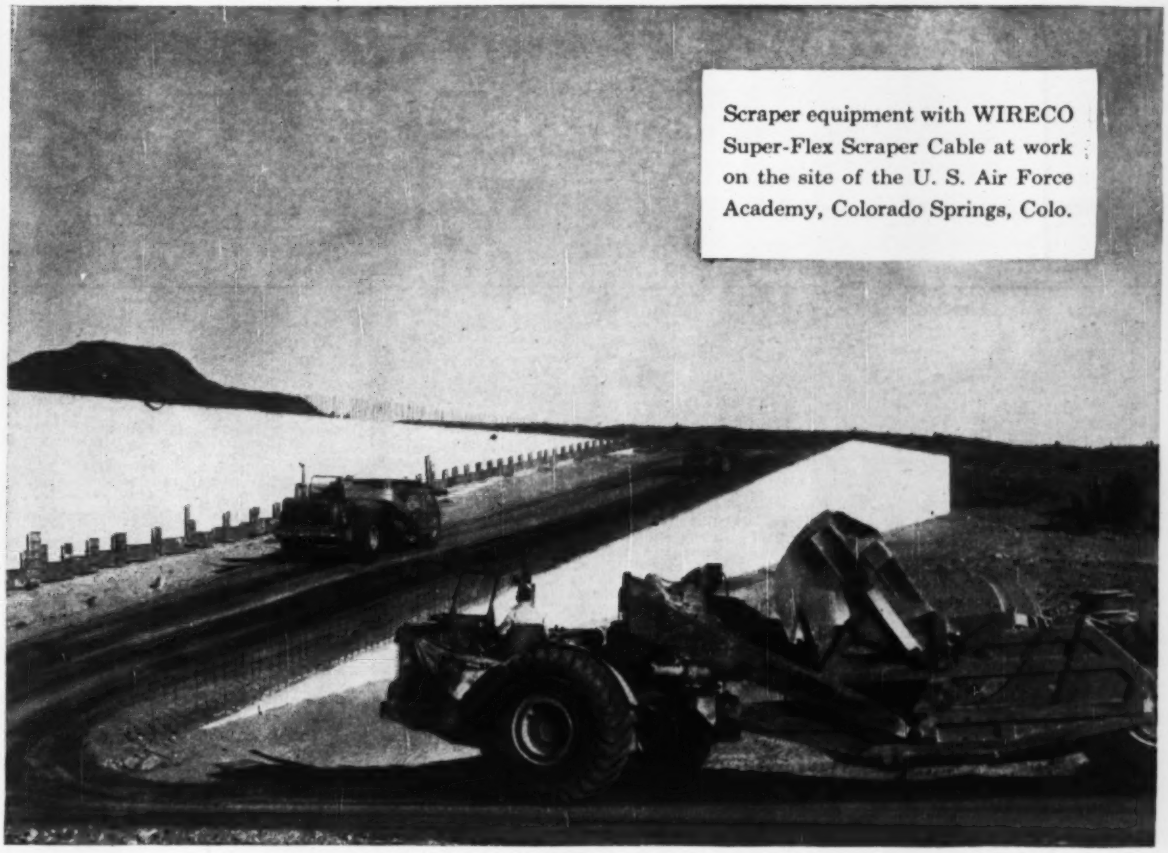
McGRAW-HILL PUBLICATIONS



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WIRECO Super-Flex Scraper Cable Is the Answer to Longer, Better Service Life!

On the Job Comparison Proved WIRECO More than 100% Better!

Excavating and grading for the new Air Force Academy was a big undertaking and demanded the finest equipment available. To get maximum performance from the equipment used, several different scraper cables were used to find the one with the longest and best service life. WIRECO Super-Flex Scraper Cable was the answer to this rope problem. This new product proved itself to be more than 100% better than others used. Whatever the problem in the construction field, WIRECO has the answer. Consult your WIRECO Distributor for complete details of this amazing test and all wire rope needs.

WIRECO Super-Flex is better because of its FLEXIBILITY and ABRASION RESISTANCE

The special construction of Wireco Super-Flex Scraper Cable combines these two characteristics in a rope that thrives on rough going . . . insures more yardage and greater profit!

SAFETY ENGINEERED

to the demands of your job! Comes wound on scraper reels ready for fast, easy mounting, yet costs no more!

See your WIRECO Distributor TODAY!

WIRE ROPE CORPORATION OF AMERICA

St. Joseph, Mo. Phone 3-0287

(Continued from page 109)

NEW JERSEY—BA 9/26—N. J. Hy. Auth., John B. Townsend, secy., **Red Bank,**

Bergen Co.—constr. service bldg., Montvale Borough, Garden State Parkway, Contr. No. 215, Sect. 1A. Plans deposit $5. CD 12/19/55.

Pa., Phila.—BA 9/26—Dpt. Procurement, City Hall Annex, grading and constr. retaining wall, asph. paving, (assessment work) bit. concrete paving (assessment work) constr. curbing, placing top soil and seeding, Center North Area, traffic signal installation work, asph. repaving, resurf. and widening, etc. CD 1/31/45.

PENNSYLVANIA—BA 9/27—State Dpt. Hys., 506 North Office Bldg., Harrisburg,

Pike Co.—rein.-con. deck bridge over Twin Lake Creek between Parkers Glen and Twin Lakes, 0.09 mi. L.R. 51034.

▲ **PENNSYLVANIA**—BA 9/27—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Butler Co.—crushed agg. base with bit. surf., 18 ft. wide on Traffic Rte. 138, southwest of West Sunbury Borough.

Erie Co.—divided hy. c. conc., 24 ft. wide on each side of earth medial area 56 ft. wide; one rein.-con. bridge and 4 concrete boxes, two pairs concrete deck I-beam bridges constr. of intersecting hys., township roads, ramps and service roads with aggreg. base and bit. surf. of various widths and three I-beam bridges with an overall length of 12,461 ft., on Legislative Rte. 797 (Section 2) (Throughway) from Platea Borough westerly, 5.09 mi., FAI. CD 9/6/56.

c. conc. 24 ft. wide on each side of an earth medial area 56 ft. wide 2 rein.-con. box culverts; one pair concrete deck I-beam bridges, constr. intersecting hys., ramps, etc., 4 I-beam bridges with an overall length of 15,594 ft., on Legislative Rte. 797, Section 4 (Throughway) from 0.72 mi. west of Township Rd. 547 to near Twp. Rd. 428, FAI. CD 9/6/56.

Fayette Co.—crushed aggreg. base, bit. surf. 24 ft. wide on each side of an earth, concrete divisor, 20 ft. and variable in width, separated hys. consisting of crushed aggreg. base with bit. surf. 24 ft. wide on northbound and southbound lanes, on Traffic Rte. 51 from north of Uniontown to point beyond L.R. 26032, 4.47 mi., Federal Aid Primary.

5.4 mi. divided hy. consisting of buildup of existing pavt. 24 ft. wide new addnl. lane of crushed aggreg. base with bit. surf., 24 ft. wide, incl. constr. concrete traffic divisor, one I-beam bridge, Traffic Rte. 51, from north of L.R. 26032 to point north of Township Rd. 669, Federal Aid Financing.

Greene Co.—2.66 mi. wid'n. and overlay of existing pav't., aggreg. base, bit. surf. 22 ft. wide, L.R. 30027 and 20066, from near Baileys Crossroads, southeast toward Paisley.

Lackawanna Co.—1.92 mi. divided hy. crushed aggreg. base, bit. surf. 24 ft. wide on each side of an earth divisor, constr. I-beam bridge and approach ramps, one prestressed precast rein.-con. bridge, 2 I-beam bridges, L.R. 790, Sect. 1A, in city of Scranton, Dunmore and Throop Boroughs (Scranton Bypass) FAI.

1.67 mi. divided hy. crushed aggreg. base bit. surf. 24 ft. wide on each side of an earth divisor, also 4 I-beam bridges, one plate girder bridge constr. off-ramps and service roads of various widths, L.R. 790, Section 1A, in vicinity of Dickson City Borough and City of Scranton (Scranton Bypass) FAI.

cleaning existing stream channel and constr. Class B c. conc. slopewall 0.13 mi. along right bank 32 ft. wide, L.R. 35055, along Lackawanna River to Old Forge Borough, FAI.

Mifflin Co.—0.91 mi. crushed aggreg. base, bit. surf. 20 ft. and one rein.-con. arch, on Traffic Rte. 103, in vicinity of Granville.

Northampton Co.—0.28 mi. crushed aggreg. base, bit. surf. 22 ft., incl. constr. rein.-con. arch, Traffic Rte. U.S. 611, on Lackawanna Trail south of Mount Bethel.

Westmoreland Co.—c. conc. 0.76 mi. Traffic Rte. 906, 30 ft. wide.

D. C., Wash.—BA 10/2—D. C. Govt. Dpt. Hys., 499 Pa. Ave. N.W., grading, sewer and water mains, Military Rd. and Missouri Ave., 13 to 27 Sts., Fed. Aid Proj. U-49 (2). CD 8/29.

N. Y., New York—BA 10/16—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, Contr. No. 1, new river piers for constr. Broadway Bridge over Harlem River Ship Canal. Plans deposit $25. CD 1/10.

▲† **Pennsylvania**—BA About 10/17—U. S. Eng., 2635 Abbottsford Ave., Phila., Prompton Dam, spillway and outlet works on Lackwaxen River near Prompton. Extended date. CD 8/15.

BUILDINGS—BA

▲ **D. C., Wash.**—MEMORIAL—BA 9/26—National Guard Assoc. of U. S., 100 Indiana Ave. N.W., memorial bldg., Massachusetts Ave. and North Capitol St. Plans deposit $50. Justement, Elam & Darby, 2011 K St. N.W., archts. CD 10/1.

Pa., Bradenville—SCHOOL—BA 10/1—Pa. Pub. School Bldg. Auth., 101 S. 25th St., Harrisburg, elementary school bldg. for Derry Twp. School Dist. Plans deposit $30. W. F. Rittenhouse, Box 350, Kittanning, Pa., archt.

▲ **N. J., Fort Dix**—HOUSING—BA 10/16—U. S. Eng., 2635 Abbottsford Rd., Phila., Pa., 702 unit Capehart permanent family housing, Fort Dix Military Reservation, approx. 1 mi. southeast on Juliustown Rd. from New Jersey Route 38. $8,500,000. Howell Lewis Shay & Assocs., 1801 Packard Bldg., Phila., Pa., engrs.-archts. CD 5/28/56.

HEAVY CONSTRUCTION—LB & CA

South Shore Constr. & Dredging Corp., 100 West Ave., Patchogue, N. Y., LB **$107,036** (12 bidders) completing boardwalk reconstr. Central Mall area, Jones Beach State Park, Wantagh, NEW YORK. Long Island State Park Comn., Administrative Headquarters, Belmont Lake State Park, Babylon, N. Y. Bids Sept. 3. CD 8/20.

John W. Rouse Constr. Co., Governeur, N. Y. LB **$499,499**. Contr. T-8, foundations for Barnhart-Adirondack Transmission Line-north extension near Massena, St. Lawrence Co., Sepc. PA-8-103, NEW YORK. Power Auth. of State of New York, Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids Sept. 4. CD 8/16.

Electrical Constructors, 1758 Cleveland St., Columbus, O. CA **$628,861**, Contr. T-7, 115 kv. transmission lines for Reynolds Power Supply, NEW YORK. Power Auth. of the State of New York, Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids Sept. 3. (**Correction**—name and address of contractor). CD 9/5, under LB.

Fred Gabriele, 2767 Reservoir Ave., New York, N. Y. LB **$217,860**. two playgrounds in Echo Park at Echo Pl. and 178 St., Bronx Boro, 17-156, NEW YORK, N. Y. Dpt. Parks, Arsenal Bldgs., Central Pork, 64 St. and 5 Ave., New York 21, N. Y. Bids Aug. 9.

NEW JERSEY—New Jersey Turnpike Auth., Dpt. P. Information, New Brunswick. Bids opened 9/5.

Ernest Jarvis & Co., 236 Chestnut St., Newark, N. J LB **$229,054**. (4 bidders), fabricate, install approx. 40 addnl. emergency speed warning signs on its 118 mi. turnpike, Hudson Co. CD 8/15.

Standard Bithulitic Co., foot of Brill St., Newark, N. J., CA **$163,218**, wid'n., reconstr. Evergreen Pl., EAST ORANGE, N. J. City, City Hall, Arthur T. Brokaw, City Hall, East Orange, N. J., engr., awarded Aug. 28.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Latrobe Road Constr., Inc., P. O. Box 150, Latrobe, Pa., CA **$2,579,548**, divided hy. c. conc. 28,516 ft. 24 ft. wide each divisor, 2 bridges T.R. 56, New Kensington City. Lower Burrell and Allegheny Twps., Westmoreland Co. Bids Aug. 16. CD 9/3, under LB.

M. & J. B. McHugh, 892 N. Markoe St., Phila., Zone 39, Pa. CA **$91,984**. Bid No. 2871, water mains in Beyer Ave. and other locations, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Aug. 27. CD 8/13.

Tony DePaul & Son, 7509 Forrest Ave., Phila., Pa. CA **$95,138**. Bid No. 3138, paving, (assessment work) Tioga St. from Richmond St. to Delaware Ave., PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Aug. 22. CD 10/28/43.

MARYLAND—State Rds. Comn., 108 Lexington St., Baltimore, Zone 2, Bids opened 9/3,

George & Lynch, Inc., Warehouse Terminal Ave., Wilmington, Del. LB **$189,023** (5 bidders), 3 span prestressed concrete beam bridge on Mill St. extension over Wicomico River, Salisbury, Contr. Wi-292-5-120, Wicomico Co. CD 8/15.

MARYLAND—State Rds. Comn., 108 Lexington St., Baltimore, Zone 2, Bids opened 9/3,

Crest Contr. Co., Cockeysville, Md. LB **$146,593** (7 bidders), grading, drainage, surf. 0.041 mi. State Rte. 129 incl. single box culvert 9 ft. x 22 ft. near Towson, Contr. B-710-1-421, Baltimore Co. CD 8/15.

Miller Brothers, 1515 N. Quincy St., Arlington, Va. LB **$83,219** (13 bidders) Contrs. 58W and 59-S, water mains, and sewers, Overlook Sub-District, GLEN BURNIE, MD. Anne Arundel Co. Sanitary Comn., Glen Burnie, Md.

John Matricciani, Inc., 408 S. Caroline St., Baltimore 31, Md. LB **$180,269** (5 bidders) addnl. water supply Springfield State Hospital, SYKESVILLE, MD. State of Maryland, Dpt. P. Imprvts., 506 Park Ave., Baltimore 1, Md. Whitman, Requardt & Assoc., 1304 St. Paul St., Baltimore 2, Md., engrs. CD 2/12/48.

H. T. Campbell Sons Corp., Towson 4, Md. LB **$86,880** (3 bidders) Contr. 5724 RX, road imprvs., various sections, TOWSON, MD. County Executive, County Office Bldg., Towson 4, Md. Bids Aug. 27.

DELAWARE—State Hy. Dpt., J. Gordon Smith, chn., Hy. Admin. Bldg., Dover, Bids opened 9/4,

James Julian, Inc., 405 du Pont Rd., Elsmere, Del. LB **$228,454**. wid'n. resurf. hot mix b. conc. 3.842 mi. Dover to Bishop's Corner, Contr. 1263, FAP F-42 (4), Kent Co.; LB **$202,033**, hot mix b. conc., stab. base 1.555 mi. Rte. 619 (Rte. 113 to Rte. 36), Contr. 1449 FAP S-206 (1), Sussex Co. CD 8/29.

DELAWARE—State Hy. Dpt., J. Gordon Smith, chn., Hy. Admin. Bldg., Dover, Bids opened 9/4,

James Julian, Inc., 405 du Pont Rd., Elsmere, Del. LB **$150,030**. prestressed precast rein.-con. slab bridge with flex. pavt. approaches 0.626 mi. South Little Creek Road, Contr. 1445, FAP S-202 (2), Kent Co. CD 8/29.

BUILDINGS—LB & CA

Vista Terrace Homes Corp., 87-16 121 St., Elmhurst, N. Y., Owner Builds. **$500,000**. 92x212 ft. multiple DWELLING and GARAGE, 86-11 Whitney Ave., northwest corner of MacNish St., ELMHURST, N. Y. CD 5/8.

Dorothy Slesinger, c/o Siegel & Green, 1841 Broadway, New York 23, N. Y. Separate Contracts. **$100,000**. GARAGE alterations, 327 W. 37 St. and 310 W. 38 St., NEW YORK, N. Y. CD 12/13/55.

Land Properties, Inc., 1841 Broadway, New York 23, N. Y. Separate Contracts. **$500,000**. OFFICE alterations, NEW YORK, N. Y. CD 10/15/55.

▲ **Psaty & Fuhrman, Inc.**, 369 Lexington Ave., New York 17, N. Y. CA **$3,628,500**. 12 story HOSPITAL for 180-patients, Park Ave. and 77 St., NEW YORK, N. Y. Lenox Hill Hospital, Park Ave. and 76 St., New York 21, N. Y. Rogers & Butler, 219 E. 44 St., New York 17, N. Y., archts. CD 11/11/55.

Charles Braham, 153 Haase Ave., Paramus, N. J. Own Forces, **$800,000**. 40 HOMES, Hillside Ave. known as Elbrook Estates, ALLENDALE, N. J.

Jacksonville Estates, Inc., (Jos Nestico), 340 Totowa Rd., Totowa, N. J., Own Forces, **$750,000**. 40 HOMES, West Allendale Ave. known as Delta Court Estates, ALLENDALE, N. J. Elliott Coe, 41 Clinton Ave., Ridgewood, N. J., archt.

▲ **Bernard Berk**, 1518 East 8th St., Brooklyn, N. Y. Own Forces, **$2,500,000**, 80 HOMES, Fairview Dr. and Mt. Airy Rd., BASKING RIDGE, N. J. Dan. Washington, R. F. D., Chatham, N. J., archt.

▲ **Jos. & Ben Nestico, operating as Jacksonville Estate Inc.**, 620 Jacksonville Rd., Pompton Plains, N. J. Own Forces, **$1,100,000**. 50 HOUSES, Grandview Ave., HAWTHORNE, N. J. Elliott Coe, 41 Clinton Ave., Ridgewood, N. J., archt.

Samuel G. Hebel operating as Forest Hills Constr. Co., 339 W. St. George Ave., Linden, N. J. Own Forces, **$750,000**. 34 HOUSES, North Stiles St. and Karen Terrace Linden, known as Forest Hills, LINDEN, N. J. Peter Grygotis, 309 Aldene Rd., Roselle, N. J., archt.

▲ **Frank Briscoe Co., Inc.**, 287 South 19 St., Newark, N. J., CA Over **$2,000,000** (8 bidders) 95 bed HOSPITAL BLDG. and enlarged OFFICE, LABORATORY and CLINIC FACILITIES, MORRISTOWN, N. J. Bd. Trustees All Souls Hospital, Mt. Kemble Ave., Morristown, N. J. CD 8/15.

▲ **Mahony-Troast Constr. Co.**, 790 Bloomfield Ave., Clifton, N. J., CA Est. **$1,250,000**. HOSPITAL, Old Hook Rd., WESTWOOD, N. J. Pascack Valley Hospital, Hospital Assn., Westwood, N. J. CD 5/7/56.

Ferraro Constr. Co., 523 N. Homewood St., Pittsburgh, Pa. CA **$705,000**. 4½ story, 303 ft. long, 105 ft. wide, 99 ft. high, steel, concrete PARKING GARAGE, Lysle Blvd. and Locust St., McKEESPORT, PA. McKeesport Parking Authority, 508 Locust St., McKeesport, Pa. Donald N. McNeil, 335 Shaw Ave., McKeesport, Pa., engr. Awarded Sept. 6. CD 7/17, under LB.

Uniontown Constr. Co., 144 E. Main St., Uniontown, Pa., CA **$706,000** general constr. HIGH SCHOOL for Myersdale Joint School Dist., MYERSDALE, PA. Pa. Pub. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids Aug. 6. CD 8/14, under LB.

▲ **Diller Plank, Inc.**, Box 203, Willow Street, Pa. CA **$1,254,763** general contract SECONDARY SCHOOL for Eastern Joint School Dist., Wrightsville, YORK, PA. State Pub. School Bldg. Auth., 101 S. 25 St., Harrisburg, Pa. Bids Aug. 1. CD 8/12, under LB.

Foxcroft, Inc., 1200 Sheridan Ave., Baltimore, Md. Owner Builds. **$460,000**, 48 row-type HOUSES, 1200 block Sheridan Ave., BALTIMORE, MD.

Frederick Constr. Co., Frederick, Md. CA **$300,000**. masonry, concrete, steel FACTORY addn., FREDERICK, MD. Frederick Tailoring Co., S. Wisner St., Frederick, Md.

Choptank Constr. Co., Cambridge, Md. LB **$361,000**, est. $300,000 (3 bidders) 1 story, brick, concrete, steel, block North Easton Elementary SCHOOL, Easton, PRINCE GEORGE, MD. Bd. Educ. for Talbot Co., Prince George, Md. Finney, Dodson, Smealie, Orrick & Assoc., 320 W. 24 St., Baltimore 11, Md., archts.

▲ **Charles H. Thompkins Co.**, 1737 "K" St. N. W., Wash., D. C. CA Est. **$3,000,000**. HOME OFFICE BLDG., New Hampshire Ave., G, F, and 25 Sts. N. W., WASH., D. C. Peoples Life Insurance Co., 1343 H. St. N. W., Wash., D. C. Bids Aug. 29. CD 8/15.

Donohoe Co., Inc., 314 Pennsylvania Ave. S. E., Wash., D. C. CA Est. **$100,000**. 2 story, brick, cinder block WAREHOUSE, 6200 Chillum Pl. N. W., WASH., D. C. Evan A. Scholl, c/o Donohoe Co., Inc., contractor. Wendell B. Hallett, 6525 Piney Branch Rd. N. W., Wash., D. C., archt.

Helco Eng. & Constr. Co., 707 Tatnall St., Wilmington, Del., CA **$527,000**. Greenwood SCHOOL addns., etc., GREENWOOD, DEL. Greenwood School Dist., Greenwood, Del. Bids Aug. 14. CD 8/6.

SOUTH

HEAVY CONSTRUCTION—BA

† **Fla., Pensacola**—TRESTLE REPAIRS—BA 9/24—Officer in Charge of Constr., Building 45, U. S. Naval Air Station, Pensacola, railroad trestle repairs, Structure 757, Naval Air Station, NBy 8769, Spec. 8679/57.

Fla., Lake Worth—BA 9/26—City, City Hall, water treatment plant, water supply facilities, appurtenances. Plans deposit $40. Russell & Axon, Box 1431, Daytona Beach, engrs. CD 6/23/56.

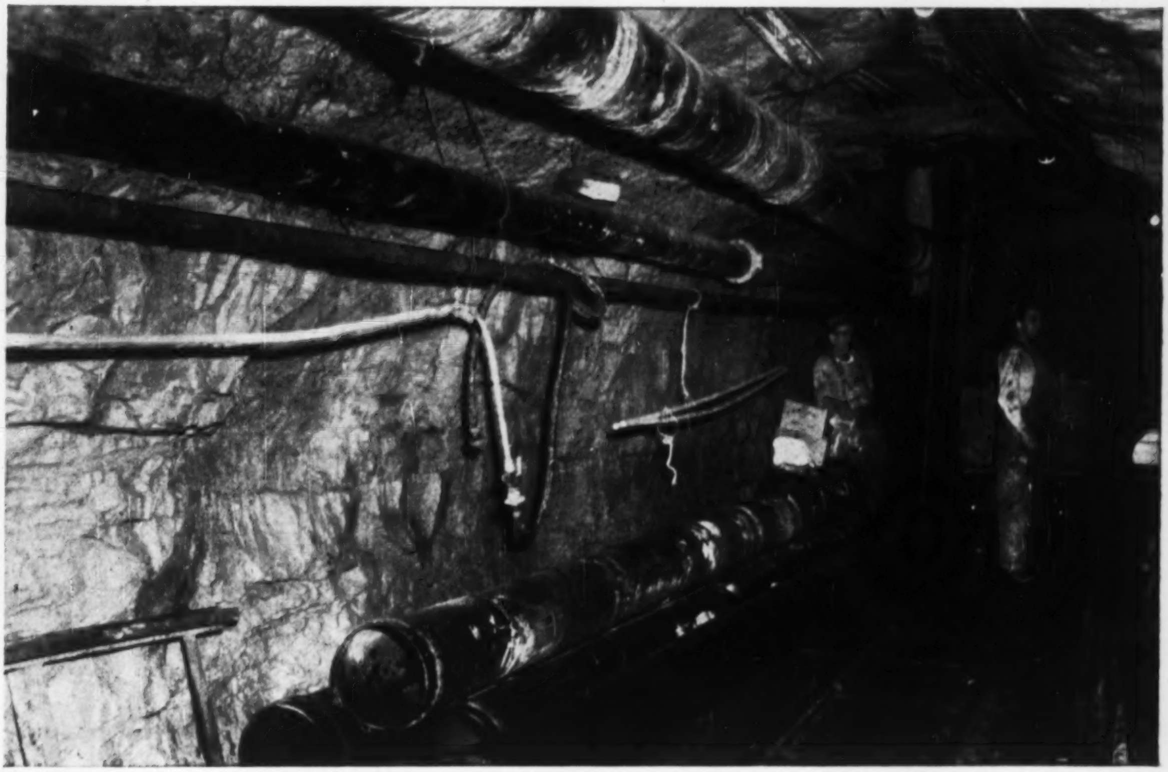
† **Miss., Biloxi**—SPRINKLER SYSTEM—BA 9/26—U. S. Eng., 2301 Grant St., Mobile, Ala., sprinkler system for lawns of new hospital, Keesler Air Force Base. CD 2/7/51.

† **Louisiana**—BA 9/27—U. S. Eng., foot of Prytania St., New Orleans, Amite River and tributaries diversion channel, 4.8 mi. upstream from Lake Maurepas, Livington Parish.

La., Lake Charles—DRAINAGE, etc.—BA 9/30—Parish Police Jury, Airport Dist. No. 1, Courthouse, Lake

(Continued on page 115)

VITAL INGREDIENT FOR TUNNEL CONSTRUCTION



You can't see it, but you couldn't build tunnels without fresh air to sustain life underground.

That's why contractors depend on ventilating lines like these made up of Naylor Spiralweld pipe—the one light-weight pipe with the exclusive spiral-lockseam structure that assures strength and safety with economical performance.

Naylor pipe is light in weight. It speeds handling and installation. Naylor pipe is strong. Has what it takes for push-pull ventilation. Naylor lines can be made up quickly—especially with the one-piece Naylor Wedgelock coupling that can be connected with only one side of the pipe in the open.

Keep in mind, too, that the Naylor structure permits the use of lighter gauge material without sacrifice of strength—a factor that adds to the over-all economy of this distinctive piping.

Write for Bulletins No. 507 and No. 514.

NAYLOR

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After drilling 15 to 20 shoot-holes, the Tractair moves to the next job. "We save time and labor because the Le Roi unit doesn't need to be babied into position," says Green. "We drive the Tractair onto rocks, slopes, or loose ground and start drilling."

Tractairs* Save $150 a Day at Blasting Site

Le Roi tractor-compressor used to drill shoot-holes for blasting overburden

Easier and safer to handle on rough terrain than dozer-drawn compressors, superintendent says

The V. N. Green Co., Brown's Branch, W. Va., saves $50 per day at each site by using Le Roi Tractairs to drill shoot-holes for blasting surface rock at their strip mining operations. When all three Tractairs are used, as is generally the case, daily savings total $150, reports John W. Green, job superintendent.

Previously-used wheel type compressors had to be moved around the site by a standby dozer. The 10 to 15 moves per day took two hours. The dozer lost the same amount of time, too, when its work was interrupted.

Mobility Minimizes Delays

Green points out that now "the Tractair is driven directly to the drilling area, the hose is attached, and drilling starts at once." In addition, Tractair's easy maneuverability over the extremely rough terrain cuts previous relocation time by more than half, and eliminates the need for the dozer as well as the operator.

Because it's self-propelled, the Le Roi tractor-compressor is ideal for this type of work. When a job is done, the Tractair provides fast transportation for the operator, drill, and compressor to the next site. There's no need to wait for other equipment to make the move.

What's more, close-to-the-job air power shortens hose lines, substantially reduces hose damage, and eliminates power loss. The shorter lines and Tractair's 125 cfm output permit the use of two drills, when necessary.

Performs Various Jobs

Bought originally for drilling shoot-holes, the Tractair can be used for other jobs, too. "We also use our Tractairs to break paving on road construction jobs where we do the resurfacing, to tamp backfill for drain pipes, and even to clean pavement by using a rotary brush attachment."

The self-propelled, multi-purpose Tractair can provide similar savings for you. And its ready adaptability to a wide range of attachments can help you reduce the cost of operations requiring costly, one-purpose equipment. Contact Le Roi today.

*"Tractair" is the registered trademark for Le Roi's combination tractor—air compressor.

WABCO

LE ROI Division of Westinghouse Air Brake Co., Milwaukee 1, Wisconsin, manufacturers of Newmatic air tools, Tractair,® portable and stationary air compressors, and heavy-duty industrial engines. Write us for information on any of these products.

T-77

(Continued from page 112)

Charles, Part A (1) 880 lin. ft. 18 ft. rein.-con. pipe, etc. for drainage, at municipal airport, FAP Proj No. 9-16-035-701. Plans deposit $75. D. W. Jessen & Assn., Kaufman Bldg., engrs.

† **Fla., Key West**—REPAVING, etc.—BA 10/1—P. Wks. Dpt. Naval Station, Key West, repaving parking lot at Navy Commissary, NBy 10349, Spec. 10349/57.

† **West Virginia**—CEMETERY—BA On Or About 10/3—U. S. Eng., P. O. Box 2127, 237 4 Ave., Huntington, constr. Braxton County Cemetery for Sutton Reservoir Proj., Elk River, Serial No. CIVENG-46-022-58-14. CD 8/18/55, under Earthwork, etc.

† **Tenn., Memphis**—ELECTRICAL DISTRIBUTION—BA 10/17—Dist. P. Wks. Office, Bldg. No. 13, U. S. Naval Base, Charleston, S. C., permanent electrical distr. to Bldgs. S-240 and S-241, U. S. Naval Air Station, NBy 15964, Spec. No. 15964/57. $25,000-$100,000.

† **Ga., Savannah**—TAXIWAY EXTENSION—BA On Or About 10/18—U. S. Eng., 200 E. St. Julian St., taxiway extension, Hunter Air Force Base, Serial No. ENG-109-133-58-12. CD 8/30/55.

BUILDINGS—BA

La., Donaldsonville—HOUSING—BA 10/3—Housing Auth. of City of Donaldsonville, Donaldsonville, LA-43-1, housing, incl. 15 dwellings containing 30 units and 1 office maintenance bldg. Plans deposit $25. A. Hays Town, 203 Triad Bldg., Baton Rouge, archt. CD 9/19/56.

La., Leesville—SCHOOL—BA 10/3—Vernon Parish School Bldg., Leesville, elementary school. Plans deposit $50. C. E. Ammen & Sol Rosenthal, 454 Lee Circle Blvd., New Orleans, archts.

BUILDINGS—SLC

Ga., Atlanta—MOTEL—Tech Motel, Inc., 316 Maple Dr. N. E., soon lets contract, motel. Mastin & Summer, 3166 Maple Dr. N. E., archts.

HEAVY CONSTRUCTION—LB & CA

† **Dickerson, Inc.**, Monroe, N. C., CA **$184,197** (5 bidders) campground and roads and parking space at Hatteras Island, Camp Hatteras National Seashore Recreational Area, NORTH CAROLINA. National Park Service, Dpt. Interior, Interior Bldg., 19 and C Sts. N.W., Wash. 25, D. C. CD 5/18/56.

Sumter Builders, Inc., Sumter, S. C., CA **$146,036**. electrical distr. sys., Halifax Co., NORTH CAROLINA. Halifax Electric Membership Corp., Enfield, N. C. L. E. Wooten & Co., 306 S. Dawson St., Raleigh, N. C., engrs. CD 7/11/51.

L. O. Chapman Co., Inc., Independence Blvd., Charlotte, N. C., CA **$125,611**. sewage treatment plant imprvs., GIBSONVILLE, N. C. Town, Town Hall, Gibsonville, N. C. W. K. Dickson & Co., Inc., 404½ S. Tryon St., Charlotte, N. C., engrs.

SOUTH CAROLINA—State Hy. Dpt., C. R. McMillan, ch. hy. comr., Hotel Jefferson, Columbia,

J. F. Cleckley & Co., Box 656, Orangeburg, S. C., CA **$671,580**, b. conc. surf. 14.013 mi. US Rte. 501 and connections S. C. Dockets Nos. 26.344 and 26.348.1, FAP Nos. Fu-7 (4) and F-2531 (2) Horry Co. Bids Aug. 13. CD 8/22, under LB.

GEORGIA—State Hy. Dpt., 2 Capitol Sq., Atlanta,

Claussen-Lawrence Constr. Co., 1394 Gwinnett St., Augusta, Ga. CA **$834,295** grading, paving 13.735 mi. 1 bridge, U. S. Rte. 80, Proj. F-097-1 (1) Emanuel and Jenkins Counties. Bids July 26. CD 7/30, under LB.

J. B. McCrary Co., Inc., Atlanta Federal Savings Bldg., Atlanta, Ga., LB **$196,490**, sewage treatment plant and lift stations, LAWRENCEVILLE, GA. City, City Hall, Lawrenceville, Ga. Bids Aug. 23. CD 8/12.

† **J. C. Harper Constr. Co., Inc.**, 960 Orange Ave., Winter Park, Fla., CA **$199,196**, GM Instrument (GAT) Building, BOMARC-SAGE, AFMTC, Patrick Air Force Base, COCOA, FLA. U. S. Eng., 575 Riverside Ave., Jacksonville, Fla. CD 8/23/56.

† **Nat G. Harrison & Assocs.**, 5137 N. E. 2 Ave., Miami, Fla. LB **$76,150** Item No. 1, LB **$74,350** Item No. 2, power plant expansion and trenching, Grand Bahamas Island, NBy 13858, Spec. 13858/57, BAHAMAS. Resident Officer in Charge of Constr., Bureau Yards & Docks, 245 Alcazar Ave., Coral Gables, Fla. Bids Aug. 30. CD 8/14.

Harry Pepper Co., 119 W. 8 St., Jacksonville, Fla., LB **$159,500**. sewage treatment plant, EAU GAILLIE, FLA. City Council, City Hall, Eau Gallie, Fla. Bids June 17. CD 6/10.

† **R. H. H. Blackwell**, Box 5906, Jacksonville, Fla. LB **$84,425**, Total "A", LB **$86,315** Total "B", No. 8087, steel sheet pile and bit. paving and electrical wrok, U. S. Coast Guard Depot, FORT PIERCE, FLA. Seventh Coast Guard Dist., 150 S. E. 3 Ave., Miami 32, Fla. Bids Sept. 4. CD 8/21.

Foxworth & Runk Constr. Co., Box 1537, St. Augustine, Fla., LB **$241,292**. MARINE STUDIOS renovations and addns., MARINELAND, FLA. Mr. W. F. Rolleston, Marineland, Fla. Myrl Hanes Assocs., 201 N.W. 10 Ave., Gainesville, Fla., archt.

L. & P. Corp., Box 719, Ocala, Fla., LB **$96,297** Base Bid, sewage works imprvs., OCALA, FLA. City Purch. Agt., City Hall, Ocala, Fla. Russell & Axon, Municipal Airport, Box 1431, Daytona Beach, Fla., engrs. CD 10/7/55.

Misner & McEvoy, 115 75 Ave., St. Petersburg, Fla., LB **$88,947**. bulkhead and piling for shop and office bldg., TAMPA, FLA. Laclede Steel Co., c/o Pullara, Bowen & Watson, archts., 2910 Grand Central, Tampa, Fla. CD 8/28, under Industrial Buildings.

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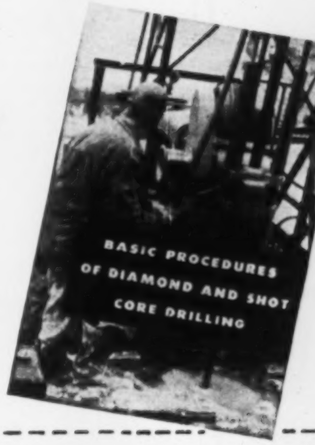

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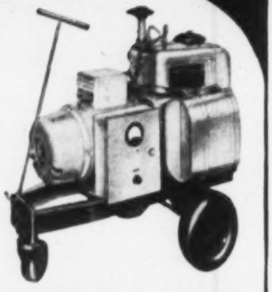

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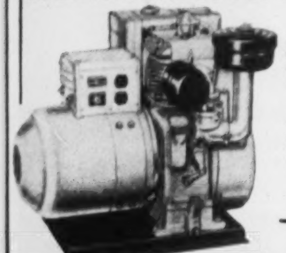

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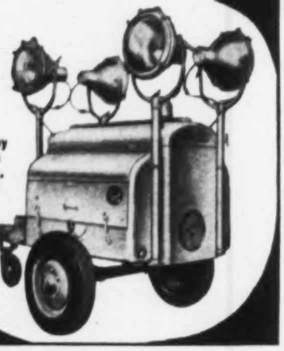

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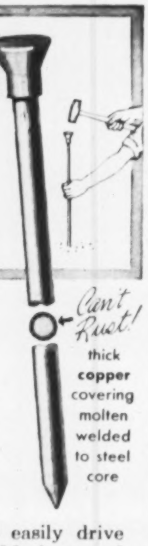

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Write for Bulletin 144

S J. Lemoine & Co., P.O. Box 458, Bunkie, La., CA **$101,000.** AUTOMOBILE SERVICE, SHOPS and SALES BLDG., ALEXANDRIA, LA. Walker Oldsmobile Co., MacArthur Ave., Alexandria, La. C. Scott Yeager & Assoc., 205 Lee St., and P.O. Box 1105, Alexandria, La., archts.

H. C. Peck Lumber & Supply Co., Sickly Island, La., CA **$379,800.** ELEMENTARY SCHOOL, FERRIDAY, LA. Concordia Parish School Bd., Ferriday, La. John W. Baker & Assocs., Winnsboro, La., archts.

Madden Co. Inc., Box 5602, Bossier City, La., LB **$440,000** (3 bidders) ELEMENTARY SCHOOL, LEESVILLE, LA. Vernon Parish School Bd., Leesville, La. CD 8/9, under LB.

C. E. Slade, Contractor, 2107 Country Club Dr., Monroe, La., LB **$180,995**. Frostkraft RESEARCH CENTER, MONROE, LA. Olin Mathieson Chemical Corp., West Monroe, La. Neild-Sondal Assocs., 960 Jordan St., Shreveport, La., archts. Bids Aug. 21.

J. A. Jones Constr. Co., Box 1818 Shreveport, La., LB **$549,700. 1** story Carven Elementary SCHOOL, NEW ORLEANS, LA. Orleans Parish School Bd., 703 Carondelet St., New Orleans, La. Bids Aug. 20, awarded Aug. 26. **CD 8/28, under LB.**

Volunteer Structures, Inc., 4103 Nevada Ave., Nashville, Tenn., CA **$115,000**. fabrication, erection structural steel for 150,000 sq. ft. PLANT, CLARKSVILLE, TENN. Trane Co., 206 Cameron Ave., LaCrosse, Wis. CD 6/21.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

Ind., Indianapolis—BA 9/23—Comrs. Marion Co., Courthouse, Perry Twp. Bridge No. 17 on Carson Ave.; Franklin Twp. Bridge No. 19, 23 and 22 all on S. Emerson Ave.; Wayne Twp. Bridge No. 79, 75, 76, 73 and 71, all on Morris St., Frank Unversaw, Marion Co., Courthouse, co. engr. CD 8/29.

INDIANA—BA 9/24—J. Peters, chn. Indiana State Hy. Comn., State House Annex, Indianapolis,

Madison and Grant Counties—bit. wid'n. and resurf. 4.678 mi. SR 37 northeast from 0.176 mi. southwest of county line at Rigdon, Proj. F-650(19), Contr. RS-4243. Plans deposit $1.

Marion Co.—c. conc. 4.485 mi. Road No. 37 from Keystone Ave. Indianapolis to 71st St., Proj. No. F-824(4), Contr. R-4241. Plans deposit $2.50. CD 4/17.

Marion, Hamilton and Boone Counties—bit. wid'n. and resurf. 8.483 mi. US 421 from 0.01 mi. south of county line to 0.02 mi. north of SR 32 south of Rosston, Proj. F-221(8), Contr. RS-4242. Plans deposit $1.

WISCONSIN—BA 9/24—State Hy. Comn., E. L. Roettiger, hy. engr., State Hy. Office Bldg. Madison,

Dunn Co.—Structures B-17-18, 19 and 20, Int. Rte. 103, The Hudson-Eau Claire (Wilson-Knapp Section) Road. Proj. I 103-4(6), Contr. 3. Plans deposit $2.

Kenosha and Racine Counties—structures, Int. Rte. 101, The Illinois State line-Milwaukee Co. line (S.T.H. 50-S.T.H. 11 Section) Road, Proj. I 101-1(4), Contr. 2. Plans deposit $7.

Pierce Co.—Structure B-47-22, S.T.H. 29, The East Cascade Ave. Overhead, City of River Falls, Proj. T 077(2), Contr. 1. Plans deposit $1. CD 11/27.

WISCONSIN — BA 9/24 — State Hy. Comn., E. L. Roettiger, hy. engr., State Hy. Office Bldg., Madison,

Chippewa Co.—grade, sub-base, base course 5.482 mi. C.T.H. "H", The Stanley-S.T.H. 64 Road Proj. S 048 (5), Contr. 1. Plans deposit $4.

Douglas Co.—borrow excav., gran. sub-base course, grav. or crushed stone base course, etc., 0.299 mi. The Middle River-Superior Wayside, Dairyland-Superior Wayside and Gordon-Solon Springs Wayside. Projs. T 08-5 (18), Aux. 4.1, T 028-4 (11), Aux. 6.1 and T 08-5 (19), Aux. 7.1. Plans deposit $1.

Dunn Co.—grade, sub-base and structure 2.085 mi. The Hudson-Eau Clair (Wilson-Knapp section) Road, Int. Rte. 103, Proj. I 103-4 (6). Plans deposit $6.

Eau Claire Co.—base course 3.394 mi. The Brackett-Fall Creek Road, C.T.H. "K", Proj. S 019 (4), Contr. 3. Plans deposit. $1.

-grading 3.394 mi. The Brackett-Falls Creek Road, C.T.H. "K", Proj. S 019 (4), Contr. 1. Plans deposit $3.

Fond du Lac and Washington Counties—furnishing, planting U. S. Hys. 151 and 41, (The U.S.H. 151 Interchange and Waupun-Fond du Lac) (U.S.H. 151 Weigh Station) and South Co. line-S.T.H. 167 Roads, Projs. T 03-1(19), F 017-3 (8) and T 03-1 (9), Aux. 1.1.

Kenosha and Racine Counties—sub-base, base and b. conc. pavt. 6.443 mi. Int. Rte. 101, The Illinois State line-Milwaukee Co. line (S.T.H. 50-S.T.H. 11 Section) Road, Proj. I 101-1. (4). Plans deposit $13.

St. Croix and Dunn Counties—grade, sub-base and structures 2.492 mi. Int. Rte. 103, The Hudson-Eau Claire (Wilson-Knapp Section) Road, Proj. I 103-4 (6). Plans deposit $6. CD 10/6/55.

Ill., Columbia—BA 9/30—City, Albert C. Metter, mayor, City Hall, sanitary sewer extens. and all appurtenances thereto, incl. 13,175 lin. ft. 8- to 15-in. sewer lines, one overflow chamber and appurtenances. $73,000. Plans deposit $10. Russell, Axon & Assocs., 408 Olive St., St. Louis 2, Mo., engrs.

Mich., Ann Arbor—BA 10/1—City, Fred J. Looker, clk., Ann Arbor, water system, incl. **(A)** Northeast Pumping Station and 2 m.g. underground rein.-con. reservoir 80x180 ft., 20 ft. deep 12 m.g.d. pumping station **(B)** 3,700 ft. 12- to 24-in. water mains and 550 ft. sewer. Plans deposit $25. Ayres, Lewis, Norris & May, 500 Wolverine Bldg., archts.

(Continued on page 120)

Ky.—**Southern States Paving Co.**, 900-44th Ave. N., Nashville, Tenn. CA **$75,487** (2 bidders), bit. surf. Class C-1, 5.7 mi. The Hadensville-Logan Co. line Rd., SP 110-506, Todd Co.;

Ky.—**Corum & Edwards, Inc.**, Madisonville, Ky. CA **$87,880** (2 bidders) b. conc. base (Class I modified) 6.6 mi. The Tolu-Ky. 91 Rd., SP 28-206, Crittenden Co.;

Ky.—**State Contg. & Stone Co., Inc.**, Hartford, Ky., CA **$182,560** (4 bidders), bit. surf. Class C-1, 11 mi. The Ky. 144-Spice Knob-Gatewood Rd. (Ky. 1389), SP 30-617, Daviess Co.;

Ky.—**E'Town Paving Co., Inc.**, Elizabethtown, Ky., CA **$76,026** (5 bidders), bit. surf. Class C-1, 6 mi. The Big Clifty-Tar Hill-Mt. Hebron Church Rd. (Ky. 720), SP 43-615, Grayson Co.;

Ky.—**R. E. Gaddie, Inc.**, Bowling Green, Ky., CA **$81,301** (2 bidders), b. conc. (Class I modified) 5.607 mi. The Old Olga-Bryan-Creelsboro Rd., SP 104-178; SP 104-198, Russell Co.;

Ky.—**Robert L. Carter Co.**, 242 E. Main, Frankfort, Ky., CA **$165,702** (5 bidders), b. conc. (Class I modified) (limestone aggregate) 13.2 mi. The Ky. 35-Natlee Rd. (Ky. 607), SP 94-353; SP 94-333, Owen Co.;

Ky.—**Kelly Contg. Co., Inc.**, 317 Wallace Ave., Louisville; Ky., CA **$99,173** (1 bidder), b. conc. base (Class I modified) 7.412 mi. The Nancy-Faubush-Jabez (Ky. 196) Rd., SP 100-215; SP 104-298, Pulaski and Russell Counties. Grand total $1,737,214. Bids Aug. 30. Awarded Sept. 5. CD 8/14.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort,

John L. Burns, 851 Glendle Lane, Nashville, Tenn., and Waters Constr. Corp., Elizabethtown, Ky., CA **$944,772**, b. conc. surf. Class I (dense graded aggregate base) 8.175 mi. The Stanford-Somerset Rd. from near Lincoln Co. line to Old US 27 at Norwood, F 502 (7), SP 100-205, Lincoln and Pulaski Counties. Bids Aug. 23. CD 9/3, under LB.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort,

Harry O. Wyse, Versailles Rd., Lexington, Ky., CA **$890,351**, traffic bound river grav. (with Alt. "A" piling) surf. 6.269 mi. The Newport-Maysville Rd. from approx. 0.5 mi. east of Bradford to approx. 0.6 mi. west W.C.L. of Augusta, S 198 (6) SP 12-126, Bracken Co. Bids Aug. 9. CD 8/19, under LB.

Donlon Constr. Co., 1005 W. Kirkland Ave., Nashville, Tenn., LB **$543,932** Div. I water and sewerage imprvs., LEBANON, TENN. City, City Hall, Lebanon, Tenn. Bids Aug. 27, CD 8/14;

Chicago Bridge & Iron Co., Healy Bldg., Atlanta, Ga., LB **$99,800** Div. II (Lebanon, Tenn.).

† **Giva Constr. Co.**, Jackson, Miss., LB **$190,450**, est. $209,470, cleaning out and enlarging Reelfoot Bayou from spillway structure at end of Reelfoot Lake downstream for 9 mi., MEMPHIS, TENN. U. S. Eng., P. O. Box 97, Memphis 1, Tenn.

Sam Melson, Shelbyville, Tenn., CA **$529,790**, 20 room Overton JUNIOR HIGH SCHOOL, NASHVILLE, TENN. Davidson Co. Purch. Comn., Nashville, Tenn. Bids Sept. 4, awarded Sept. 5. CD 2/12.

BUILDINGS—LB & CA

Eugene Simpson & Bros., 300 Montgomery St., Alexandria, Va., CA **$992,475** INDUSTRIAL FACILITIES at D. C. Reformatory, LORTON, VA. D. C. Govt., Director Bldgs. & Grounds, 499 Pa. Ave. N.W., Wash., D. C. Bids Aug. 22, CD 8/27, under LB.

▲ **Barge-Thompson**, 136 Ellix St. N.E., Atlanta, Ga., CA **$3,000,000**. 15 story "Airtel", incl. HOTEL and AIRLINE TERMINAL, ATLANTA, GA. Heart of Atlanta Motel, Inc., 255 Courtland St. N.E., Atlanta, Ga. John Cherry, 1429 Peachtree St. N.E., Atlanta, Ga., archt. Awarded Aug. 22.

T. T. Jones Constr. Co., 3045 Buford Hy. N.E., Atlanta, Ga., LB **$353,400**. Hammond Hills Elementary SCHOOL, ATLANTA, GA. Fulton Co. Bd. Educ., County Court House, Atlanta, Ga. CD 4/30.

Samuel Knee, c/o Norman M. Giller & Assocs., archts., 975 Arthur Godfrey Rd., Miami Beach, Fla., rejected bids Aug. 27, 205-room Derby Inn HOTEL, with swimming pool and wading pool, Ocean Dr., SR A1A, HOLLYWOOD, FLA. CD 8/12.

Key West Housing Auth., Vance C. Stirrup, exec. dir., end of White St. Exten., Key West, Fla., rejected bids Aug. 15, PUBLIC HOUSING Proj. "A", "B" and "C", Proj. FLA 13-3, KEY WEST, FLA. LB **$599,970**. Will re-advertise. CD 8/23, under LB.

J. H. Sultenfuss, 201 S. Jefferson St., Tampa, Fla., LB **$677,170**. Peninsular TELEPHONE EXCHANGE, LAKELAND, FLA. Peninsular Telephone Co., Lakeland, Fla. Eliot C. Fletcher, 404 Marion St., Tampa, Fla., archt.

Bd. P. Instruction, Dade Co., 275 N.W. 2 St., Miami, Fla., rejected bids Aug. 21, West Twin Lakes Elementary SCHOOL, Ludlun Rd. and W. 59 Pl., MIAMI, FLA. LB **$404,848**. CD 8/27 under LB.

Whitmore Electric Co., Box 5140, Miami, Fla., LB **$424,681** (7 bidders) electrical work for Miami Beach EXHIBITION HALL, Washington Ave. north of municipal auditorium, MIAMI BEACH, FLA. City, City Hall, 1130 Washington Ave., Miami Beach, Fla. Bids Aug. 30. CD 8/15, under Unclassified.

▲ **Edward M. Fleming Constr. Co.**, 4121 N.W. 25 St., Miami, Fla., CA **$1,230,550**. Phase 11-PB-1, buildings and foundations, northwest of here, (Jupiter) WEST PALM BEACH, FLA. Air Products, Inc., 949 Hamilton St., Allentown, Pa. Bids Aug. 29, awarded Sept. 3. CD 9/5, under LB.

Powell & Laycock, 2916 Shannon Rd., Tuscalcosa, Ala., LB **$374,460** low rent HOUSING, Ala. 98-1 and 98-2, ALICEVILLE, ALA. Aliceville Housing Authority, Aliceville, Ala. Bids Aug. 21, CD 8/9.

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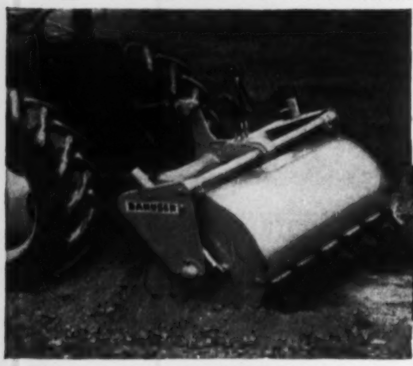

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† **R. L. Eatherly,** 1000 Lebanon Rd., Nashville, Tenn., CA **$99,485,** 505,000 cu. yd. earthwork on east bank of Pompey Ditch, Quitman Co., CIVENG-22-052-58-1, MISSISSIPPI. U. S. Eng., P.O. Box 60, Vicksburg, Miss. Bids Aug. 1. CD 7/12.

James P. Cross, New Iberia, La., LB **$249,166** (3 bidders) Amite River diversion canal, Ascension and Livingston Parishes, LOUISIANA. State Dpt. P. Wks Baton Rouge, La. Bids Aug. 26, CD 8/19;
J. A. Harper, Crowville, La., LB **$96,760** (3 bidders) Larto Lake diversion and control structure and constr. Big Bayou Dam, Catahoula Parish (Louisiaia).

† **Richard Coco & Paul Lambert,** Marksville, La. LB **$260,448** (4 bidders) restoration of city levee, Iberville Parish, Inv. 58-28, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La.

† **Southern Bridge Co.,** Box 476, Baton Rouge, La., LB **$105,400** (4 bidders) roadway grating installations, St. Claude and Florida Ave. Bridges, Inner Harbor Navigation Canal, Inv. 58-20, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La.

Flynn Mfg. Co., Alexandria, La. CA **$157,604.** street paving, sidewalks, curbing, etc. Texas Ave., Jackson St. to Rapides Ave., ALEXANDRIA, LA. City Council, City Hall, Alexandria, La.

Union Constr. Co., Inc., 2634 Almonster Ave., New Orleans, La. LB **$216,386** (3 bidders) Contr. 5704B, stations and sewerage treatment plant, St. Bernard Parish, CHALMETTE, LA. Bd. Supervs. Sewerage Dist. No. 1, Chalmette, La. Bids Aug. 27. CD 8/21.

Clement Betpouey, 1426 National Bank of Commerce, New Orleans, La., LB **$598,632,** asbestos pipe; LB **$700,750,** c.i. pipe Div. A (2 bidders) for water supply system, FRANKLIN, LA. Water Works Dist. No. 6, Franklin, La. Bids Aug. 30, CD 8/13;
Koller Constr. Co., Box 29, Houma, La., LB **$139,694** Div. B (3 bidders) water treatment plant, (Franklin, La.);
Hammond Iron Works, Box 660, Warren, Pa., LB **$67,400** (3 bidders) Div. C, water tank (Franklin, Pa.).

J. B. Talley & Co., St. Martinsville, La. CA **$423,284** c. conc. roadway, 6-in. paving drains and gutters, etc. HOUMA, LA. Mayor & Bd. Trustees, Houma, La. Bids Aug. 14. CD 7/29.

Flenniken Constr. Co., P. O. Box 650, Lake Charles, La. CA **$102,902.** street paving project involving 19,400 sq. yd. c. conc. paving and 13,100 sq. ft. concrete sidewalks, LAKE CHARLES, LA. City, Sidney L. Gray, mayor, City Hall, Lake Charles, La. Bids Aug. 21. CD 8/7.

Century Constr. Co., Box 5175, Houston, Tex. LB **$165,504.** WW projects Div. E, gas distr. sys., MOREAUVILLE, LA. Mayor and Board, Moreauville, La. Bids Sept. 4. CD 8/28.
Red River Constr. Co., Box 3132, Shreveport, La. LB **$92,474,** Div. D, water distr. sys. LB **$47,350.** Div. B, water treatment div. (Moreauville, La.).

Roland Constr. Co., Alexandria, La., CA **$63,000.** installing water services and steam lines at Northwestern State College, NATCHITOCHES, LA. Louisiana State Dpt. Education, Baton Rouge, La. Bids Aug. 14. CD 11/12/45, under Public Buildings.

Chapman Enterprises, Contractors, 2400 Louisville Ave., Monroe, La. LB **$131,304,** two swimming pools, auxiliaries, appurtenances, etc., NEW IBERIA, LA. City, Mayor, City Hall, New Iberia, La. Bids Aug. 5. CD 7/29.

Bd. of Comm., Port of New Orleans, No. 2 Canal St., New Orleans, La., rejected bids Aug. 7, 700,000 cu. yd. hydraulic fill on batture of Mississippi River, NEW ORLEANS, LA. LB **$95,900.** CD 8/16, under LB.

▲ **Boh Bros. Constr. Co.,** 2400 Cypress St., New Orleans, La., CA **$1,733,000.** concrete, deck and pipe pile structure Perry St. Wharf, NEW ORLEANS, LA. Port of New Orleans, 2 Canal St., New Orleans, La. Bids Aug. 8, awarded Aug. 23. CD 8/16, under LB.

John Riess, 806 Carondelet Bldg., New Orleans, La. LB **$490,900** (9 bidders) Contr. 160-D, 1958 addn. to Drainage Station No. 4. NEW ORLEANS, LA. New Orleans Sewerage & Water Bd., City Hall, New Orleans, La. CD 12/16/55.

Koller Constr. Co., 1814 High St., Houma, La. LB **$66,496,** water distr. lines, incl. 75,600 lin. ft. 4- to 10-in. c.i. pipe, 2,500 lin. ft. ¾ in. copper service lines, etc., POINTE-A-LA-HACHE, LA. Bd. Comrs. Dalcour Water Works Dist., Parish Court House, Pointe-a-la-Hache, La. Bids Aug. 14. S. V. Applewhite, 424 Millaudon St., New Orleans, La., engr.

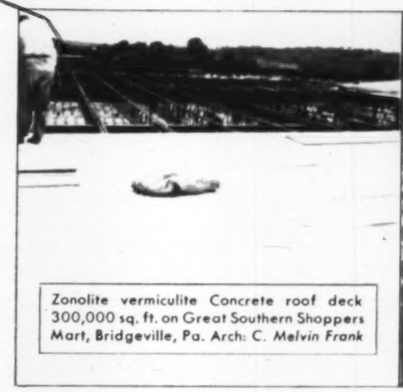
▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort,

Ky.—**Middle West Roads Co.,** 1201 Short, Louisville, Ky., CA **$162,246** (2 bidders) b. conc. base (Class I modified) 9.51 mi. The Smithland-Dover Rd. (Ky. 289), SP 111-394, Trigg Co.; CA **$89,202** (1 bidder), bit. surf. Class C-1 and b. conc. base (Class I modified) (limestone aggregate) 7.14 mi. various roads, SP 42-648 & SP 42-538, Graves Co.;

Ky.—**Cantrill Constr. Co., Inc.,** 700 N. Broadway, Lexington, Ky. CA **$133,568** (2 bidders), bit. surf. Class C-1 (limestone aggregate) 4.151 mi. The Cornettsville-Cloverfork Rd. (Ky. 699), SP 97-262, Perry Co.; CA **$167,456** (1 bidder), b. conc. base (Class I modified (limestone aggregate) 6.4 mi. The London-Baldrock (Ky. 192) Rd., SP 63-551, Laurel Co.;

Ky.—**Adams Constr. Corp.,** Paintsville, Ky. CA **$266,804** (2 bidders), bit. surf. Class C-1 (limestone aggregate) 9.638 mi. The Bledsoe-Pine Mountain-Gordon (Ky. 221) Rd, SP 48-268, Harlan Co.; CA **$209,909** (2 bidders) b. conc. base (Class I modified) (limestone aggregate) 10.29 mi. The Big Creek-Nolan, West Virginia Rd. (Ky. 468), SP 98-323, Pike Co.;

they all shopped for Firesafe, Lightweight, Low Cost Construction



Zonolite vermiculite Concrete roof deck 300,000 sq. ft. on Great Southern Shoppers Mart, Bridgeville, Pa. Arch: *C. Melvin Frank*

Northland Shopping Center, St. Louis, Mo. Zonolite plaster fireproofing is credited with earning substantial fire insurance savings. Arch: *Russell, Mullgardt, Schwarz & Van Hoefen*

Gulfgate Shopping City, Houston, Texas, uses Zonolite plaster fireproofing throughout. Arch: *John Graham & Co.*

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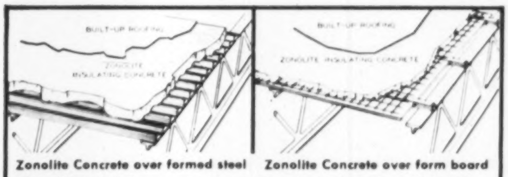

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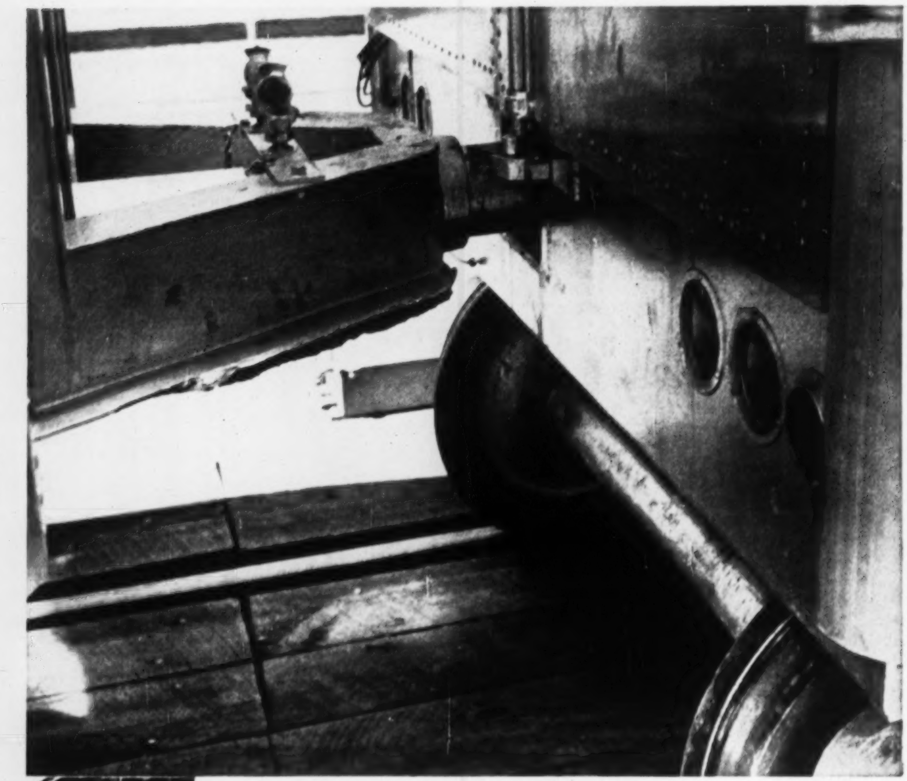
Architect ☐ Builder ☐ Other________________



Yoloy "E" high strength-low alloy steel provides required strength with less weight to the Railvan's underframing. Coupled view is shown at right.

C & O's new Railvans shown below — with combination highway and railroad wheels mounted on a single spring suspension system — operate either on the highway or railroad tracks.

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Manufacturers of Carbon, Alloy and Yoloy Steel
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District Sales Offices in Principal Cities

(Continued from page 118)

OHIO—BA 10/1—Dpt. Hys.,—Columbus, Zone 15,

Auglaize Co.—1 Proposal—U. S. R. 33, Type T-30, B-35, T-35, Plans deposit $1.50.

Fairfield Co.—c.-con. 0.663 mi. U. S. Rte. No. 33 in City of Lancaster and Berne Twp., Sect. FAI-33-(15.87-16.20), Plans deposit $1.50.

Franklin Co.—paving b. conc. surf. on c.-conc. base also constr. continuous steel beam bridge with fascia girders at S.E. and N.W. corners and with concrete deck and concrete substructure (spans variable, roadway to fit existing intersection), Br. No. FRA-3-1643, Goodale and Park Streets over North Innerbelt Expressway; also continuous steel beam bridge with concrete deck and concrete substrucure (spans two at 72 ft-3 in., roadway 52 ft with 12 ft- 6¾ in. sidewalks), Bridge No. FRA-3-1653, High St. over North Innerbelt Expressway, 0.661 mi. State Rte. 3 in City of Columbus, Sect. FRA-3-16.17, Plans deposit $10.

paving b. conc. surf. on crushed aggreg. base also reconstr. an existing separated crossing with The Chesapeake & Ohio Ry., The Norfolk & Western Ry. and the Ohio Midland Power & Light Company, consisting continuous steel beam bridge with concrete deck and concrete substructure (spans 60 ft-5 at 76 ft-60 ft, roadway 30 ft with 2 ft safety curbs), Bridge No. FRA-665-1717 over Chesapeake & Ohio Ry., the Norfolk & Western Ry. and tracks of Ohio Midland Power & Light Co., 1.08 mi. State Rte. No. 665 in Hamilton Twp., Sect. FRA-665-16.71. Plans deposit $5.

Highland Co.—paving b. conc. surf. on crushed aggreg. base also constr. continuous concrete slab bridge with capped pile substructure (spans 32 ft-40 ft-32 ft, roadway 32 ft), Bridge No. HIG-131-0385 over North Fork of White Oak Creek, 0.357 mi. State Rte. 131, in Salem Twp., Sect. (3.77) (4.34), Plans deposit $2.50.

Jefferson Co.—paving b. conc. surf. on crushed aggreg. base also constr. continuous concrete slab bridge with concrete substructure (spans two-40 ft, one-50 ft, roadway 40 ft), Bridge No. JEF-164-0446 over Elkhorn Creek 0.407 mi. State Rte. 164 in Springfield Twp., Sect. 4.30, Plans deposit $2.50.

Lucas Co.—wid'n. c.-conc. base course and resurf. b. conc. 2.496 mi. State Rte. 246 in Adams Twp., Sect. LUC-246-(0.05-2.00), Plans deposit $2.50.

Meigs Co.—paving, bit. road mix surf. on crushed aggreg. base 0.568 mi. State Rte. 248 also constr. continuous concrete slab bridge with capped pile substructure (soans two-40 ft, one-50 ft, roadway 36 ft), over East Branch of Shade River, Bridge No. MEG-248-0410, Sect. (4.00) (8.75), Plans deposit $2.50.

Pickaway Co.—paving b. conc. surf. on crushed aggreg. base 0.284 mi. Also reconstr. floor sys. of existing steel truss bridge (span 300 ft, roadway 18 ft), constr. an adjacent steel beam approach (span 49.5 ft, roadway 18 ft), altering existing substructure and appurtenant work over Big Darby Creek, Bridge No. PIC-316-0431, State Rte. No. 316, in Muhlenberg Twp. and Village of Darbyville, Sect. (4.22-4.31), Plans deposit $1.50.

Ill., **Chicago**—BA 10/2—Chicago Park Dist., 425 E. 14 Blvd., 1 story, brick field house for Avalon Park. $500,000. CD 5/9/46.

† **Illinois**—BA 10/3—U. S. Eng., 420 Locust St., St. Louis 2, Mo., approximately 2.9 mi. crushed stone road surf. on top of existing levee and road approaches, Clear Creek Drainage & Levee Dist., Proj. item VI-H (1), CIVENG-23-065-58-5, Union and Alexander Counties. CD 11/9/55.

† **Illinois**—BA About 10/4—U. S. Eng., 420 Locust St., St. Louis 2, Mo., constr. 4 railroad closure structures, Wood River Drainage and Levee Dist., Madison Co., near East Alton, Proj. Items I-K and X-I-P, CIVENG-23-065-58-12. CD 10/21/55.

Mich., **New Baltimore**—BA 10/14—City, Grace C. Balfour, clk., New Baltimore, water sys. imprvs., incl. water treatment plant, modernizing all facilities, also 1,750 ft. 20 in. intake line from Lake St. Clair and 8,000 ft. 12 in. c.i. water mains. Plans deposit $25. Ayres, Lewis, Norris & May, 500 Wolverine Bldg., Ann Arbor, engrs.

BUILDINGS—BA

Ill., **Geneva**—COTTAGE—BA 9/24—State, Div. Architecture & Eng., Armory-Office Bldg., Springfield, general work, plumbing, heating and ventilation, pipe covering, electrical work, Adjustment Cottage, Illinois State Training School for Girls.

Ill., **Lincoln**—SCHOOL, etc.—BA 9/24—State, Div. Architecture & Eng., Armory-Office Bldg., Springfield, water main exten., Lincoln State School, general work incl. mechanical and electrical work, storage bldg. and related imprv., Div. of Highways. CD 6/16/53.

Ill., **Quincy**—STORAGE—BA 9/24—State, Div. Architecture & Eng., Armory-Office Bldg., Springfield, general work incl. mechanical and electrical work, Storage Bldg. and related imprv., Div. of Highways. CD 6/16/53.

Wis., **Milwaukee**—GARAGE—BA 9/24—City, City Hall, concrete and steel work for Lincoln Ave. Garage. Plans deposit $10. E. A. Schmidt, city engr. CD 3/4.

Mich., **Frankfort**—SCHOOL—BA 10/2—Bd. Educ., Frankfort Public Schools, Grace Watson, secy., Frankfort, high school. Louis C. Kingscott & Assoc., Inc., 511 Monroe St., Kalamazoo, archt.

O., **Beachwood**—SCHOOL—BA 10/3—Beachwood Bd. Educ., 24601 Fairmount Blvd., Cleveland, Zone 24, high school addn. $550,000. Plans deposit $35 for general; $30 for trades each; $5 for paving.

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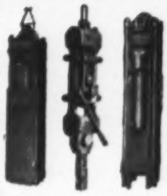

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(Continued from page 121)

Fulton, DelaMotte & Assocs., 6014 Euclid Ave., Cleveland, Zone 3, archts. CD 5/16.

O., Dayton—SCHOOL—BA 10/3—Bd. Educ., 348 W. First St., Edison School Addn. "B" and alteration, 228 N. Broadway. Rollin E. Gebhart, 474 Rockcliffe Circle, Zone 6, archt. CD 1/11/55.

▲ **Ind., Milan**—SCHOOL, etc.—BA 10/8—Milan School Bldg. Corp., high school and gymnasium. $1,300,000. McGuire & Shook, 1401 Fletcher Trust Bldgs., Indianapolis, archts. CD 3/29.

HEAVY CONSTRUCTION—SLC

Mich., Plymouth—UTILITIES—Robersall Building Co., c/o Hubbell, Roth & Clarke, Inc., archt., 954 N. Hunter Blvd., Birmingham, soon lets contract utilities, incl. 3,280 ft. c.i. water mains; 3,240 ft. sanitary sewers and 2,530 ft. 12- to 27-in. storm sewers, 9,200 sq. yd. 7 in. c. conc. paving, 18,000 cu. yd. site grading, Masserman Springdale Subdivision.

BUILDINGS—SLC

Ill., Chicago—BAKING PLANT, etc.—Kitchen of Sara Lee, Inc., Div. Consolidated Foods Corp., 2109 S. Carpenter St., soon lets contract 1 story, brick baking plant and office bldg., 5337-74 N. Elston Ave. $150,000. A. Epstein & Son, Inc., 2011 W. Pershing Rd., archt.

Ill., LaGrange Park—ACADEMY—Sisters of St. Joseph, Ogden and Drexel; soon lets contract 3 and 4 story, brick, St. Joseph's Boys Academy, Ogden and Drexel. $700,000. Gaul & Voosen, 165 E. Erie St., Chicago, archts. CD 5/15.

Ill., Melrose Park—FACTORY, etc.—Home Juice Co., Inc., 4334 W. Division St., Chicago, soon lets contract 1 story, brick factory and office bldg., macadam paving, 15th and Bloomingdale Ave. $300,000. Ralph Stoetzel, 100 W. Monroe St., Chicago, archt.

HEAVY CONSTRUCTION—LB & CA

▲ **H. L. Gentry**, Perrysburg, O., CA Est. **$1,500,000.** 23½ mi. 18 and 20 in. gas pipe line from Gibsonburg to Sandusky County to east side of Toledo, Sandusky and Lucas Counties, OHIO. Ohio Fuel Gas Co., 99 N. Front St., Columbus, O. CD 8/8.

▲ **OHIO**—State Dept. Hys., State Office Bldg., Columbus, Zone 15, Bids opened 8/30,

O.—**Connolly Constr. Co., Inc.**, Box 271, Marysville, O., LB **$159,880**. Est. $171,990 (2 bidders), Type T-30 and T-35, 19.28 mi. Proj. No. 361. Marion Co.;

O.—**The Horvitz Co.**, 4375 E. 146th St., Cleveland, O., LB **$202,567**. Est. $199,000 (1 bidder), Type T-30, B-35, T-35, 6.07 mi. Proj. No. 344, Cuyahoga Co.;

O.—**A. W. Burns & Sons Constr Co.**, 424 Woodland Ave., Columbus, O., LB **$86,723**. Est. $86,340 (5 bidders), Type T-30, B-35 and T-35, 4.06 mi. Proj. No. 347, Franklin and Union Counties;

O.—**John R. Jurgensen Co.**, 3535 Round Bottom Rd., Cincinnati, O., LB **$93,990**. Est. $89,060, (2 bidders), Type T-30, B-35 and T-35, 1.84 mi. Proj. No. 351, Hamilton Co.;

O.—**Ohio Road Paving Co.**, 30 E. Broad St., Columbus, O., LB **$153,217**, Est. 135,620 (1 bidder), Type T-30, B-35 and T-35, 12.14 mi. Proj. 343, Crawford Co.;

O.—**The Mansfield Asphalt Paving Co.**, Rear 153 Orange St., Mansfield, O., LB **$91,143**, Est. $94,970 (1 bidder), Type T-30, B-35, T-35 and B-70, 2 mi., Proj. No. 335, Richland Co.;

O.—**The Churchill Constr. Co.**, 1533 Shawnee Rd., Lima, O., LB **$73,966**, Est. $79,500, (1 bidder), Type T-30 and T-35, 8.61 mi. Proj. No. 337, Allen Co.;

O.—**Tri-State Asphalt Corp.**, S. Broadway, Martins Ferry, O., LB **$126,178**, Est. $151,160 (2 bidders), Type T-30, B-35, T-35, 12.36 mi. Proj. No. 349, Guernsey Co.;

O.—**Ohio Asphalt Paving Corp.**, 823 Prospect St., Portsmouth, O., LB **$107,947**, Est. $10,840 (2 bidders), Type T-30, B-35 and T-35, 7.49 mi. Proj. No. 356, Jackson Co.;

O.—**The Ohio Engineering Co.**, 105 Sixth St., Lorain, O., LB **$97,900**, Est. $97,330 (2 bidders), Type T-30, B-35 and T-35, 3.9 mi. Proj. No. 353, Hancock Co.;

O.—**Standard Asphalt & Tar Co.**, 1500 Penna. Ave., Charleston, W. Va., LB **$84,937**, Est. $81,770 (1 bidder), Type T-30, B-35 and T-35, 4.05 mi. Proj. No. 362, Meigs Co.; LB **$185,834**, Est. $184,020, (1 bidder), Type T-30, B-35, T-35, 9.34 mi. Proj. No. 348 Gallia Co.;

O.—**S. E. Johnson Co.**, P. O. Box 29, Maumee, O., LB **$82,323**, Est. $81,090 (2 bidders), Type T-30, T-35, 9.01 mi. Proj. No. 355, Henry and Lucas Counties;

O.—**Max J. Zeller, Inc.**, 1300 Emig Rd., Columbus, O., LB **$133,858**, Est. $132,850 (3 bidders), Type T-30, B-35, T-35, 3.27 mi. Proj. No. 372, Union Co.;

O.—**Edgar Spring, Inc.**, R. D. No. 1, New Philadelphia, O., LB **$90,337**, Est. $113,150 (2 bidders), Type T-30, B-35, T-35, 6.28 mi. Proj. No. 373, Wayne Co.;

O.—Cancelled bids to have been opened Aug. 30, 1 Proposal-USR 22, Type T-30, B-35, T-35, 0.87 mi. Proj. No. 367, Pickaway Co. CD 8/16.

Do-Mar Builders, Inc., 11609 Miles Ave., Cleveland 5, O., LB **$112,375**, est. $119,300 (4 bidders) imprv. Henry St. from Broadway to McCracken Rd., Garfield Heights, CLEVELAND, O. Comrs. Cuyahoga Co. County Admin. Bldg., Cleveland 13, O. Bids Aug. 29. CD 8/22.

Concrete Constr. Co., 886 McKinley Ave., Columbus, O. LB **$143,992.** imprv. James Rd., Livingston Ave. to Scottwood; portion of Jefferson Ave. and portion of Zettler Rd., COLUMBUS, O. City, Floyd Redick, serv. dir., City Hall, Columbus, O.

† **U. S. Eng.**, 925 New Central Bldg., Pittsburgh 19, Pa., cancelled bids to have been opened Sept. 5, ready fighter A/C shelters, Youngstown Municipal Airport, ENG-36-058-58-4, YOUNGSTOWN, O. CD 8/13.

▲ **ILLINOIS**—Illinois State Toll Hy. Comn., 20 N. Wacker Dr., Chicago,

Contracting & Material Co., 1235 Rogers St., Chicago, Ill., **Kenny Constr. Co.**, 3220 Oakton St., Skokie, Ill. and **Louis Garavaglia**, Centerline, Mich. LB **$2,149,512**. Contr. E-1B, bridge of thin shell concrete arch and prestressed concrete over Fox River, 2 R/WS and 0.27 mi. Route 45 Rd., Kane Co. CD 8/19.

▲ **Arcole Midwest Corp.**, 3225 Main St., Skokie, Ill., CA **$1,552,587**, 31 St. grade separation, Cicero Ave. to Kostner St., Cicero, CHICAGO, ILL. Cook Co., County Bldg., Chicago, Ill. Grand total $2,682,451. CD 8/19, under LB.

James McHugh Co., 6449 S. South Park Ave., Chicago, Ill., CA **$594,506**, 4 pedestrian bridges over Congress St. Expressway at Lavergne, Kildare, Springfield and Albany Aves. (Chicago, Ill.);

Mayfair Constr. Co., 5660 N. Kedzie Ave., Chicago, Ill., CA **$535,358**, N.W. Expressway, Halsted St. grade separation between Ontario and Ohio Sts. (Chicago, Ill.).

▲ **Thomas Madden Co.**, 4612 W. Van Buren St., Chicago Ill., CA **$574,450**, Congress St. Expressway, grading Austin Blvd. to Central Ave., CHICAGO, ILL. Cook Co., County Bldg., Chicago, Ill. CD 8/19, under LB; **Kenny Constr. Co.**, 3220 Oakton St., Skokie, Ill., CA **$1,088,865**, South Route Expressway, main drain, 72 St. to 83 St. (Chicago, Ill.)

Normoyle & Berg, 2223 11 St., Rock Island, Ill., CA **$665,000**, sewage disposal plant, sanitary and storm sewers, GENESEO, ILL. City, City Hall, Geneseo, Ill. CD 8/27, under LB.

▲ **WISCONSIN**—State Hy. Comn., State Office Bldg., Madison, Bids opened 9/6,

Wis.—**Baumgardt Constr. Co.**, Dodgeville, Wis., LB **$326,992** (15 bidders), grade, sub-base and structures, 7.367 mi. U.S. Hy. 41, The East Co. line-North Co. line Rd. Proj. F 03-1(49), Contr. 1, Dodge Co.;

Wis.—**Victor Nelson**, Superior, Wis., LB **$333,578**, (8 bidders), grade, base and surf. 2.418 mi. The U.S.H.-Armfields Corner and S.T.H. 47-Rhinelander Rd., S.T. Hy. 47 and U.S. Hy. 8, Projs. S 0281(5) & T 021-2 (9), Contr. 1, Oneida Co.;

Wis.—**G. A. Watson**, Barneveld, Wis., LB **$96,670**, (7 bidders), grade, base and structure 1.957 mi. The C.T.H. "M"-Mindoro Rd., C.T. Hy. "D", Proj. S 0121(9), LaCrosse Co.;

Wis.—**H. Turner & Son**, Boscobel, Wis., LB **$389,682**, (10 bidders), grade, sub-base and structures 7.455 mi. The South Co. line-S.T.H. 175 Interchange Rd., U.S. Hy 41, Proj. F 03-1(50), Fond du Lac Co. CD 8/22.

WISCONSIN—State Hy. Comn., State Office Bldg., Madison, Bids opened 9/6,

Wis.—**Highway Pavers**, Wauwatosa, Wis., LB **$143,177** (9 bidders), Structure B-51-12, The Racine-S. T. H. 31 (Horlicksville Bridge) Rd., S. T. Hy. 38, Proj. F 074-1 (4) Contr. 1, Racine Co.; LB **$249,691** (12 bidders) Structures B-70-16, B-70-19, The S. T. H. 114-North Co. Line Rd., U. S. Hy. 41, Proj. F 03-2 (35) Contr. 1, Winnebago Co.;

Wis.—**Farmer Bros.**, Tomah, Wis., LB **$218,681** (8 bidders), Structure B-28-11, The Main Street Bridge, City of Jefferson, S. T. Hy. 26, Proj. T 010-1 (12) Contr. 1, Jefferson Co. CD 8/22.

Zignego Constr. Co., 9915 Brookside Dr., Hales Corners, Wis., CA **$81,213** (10 bidders), pave W. Carmen and W. Fond du Lac Aves., MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids Aug. 23, awarded Sept. 3. CD 8/21.

▲ **Johnson & Hendrickson**, 1215 Lockwood Ave., Racine, Wis., CA **$1,038,537**, water plant imprvs., RACINE, WIS. City, City Hall, Racine, Wis. Bids Aug. 28. CD 8/23.

Tomaro Contractors, 2727 E. Layton Ave., Cudahy, Wis., CA **$711,372** (4 bidders), main sewers in Underwood Creek Parkway and R-O-W. along west county line, WEST ALLIS, WIS. Metropolitan Sewerage Comm. of County of Milwaukee, Jones Island, Milwaukee, Wis. Bids Sept. 4. CD 8/27.

Leon & Floyd Ketchum, Mason & Ted Beauchamp, Stockbridge, Mich., CA **$127,000.** lift station, sanitary sewers and force mains, MASON, MICH. City, George Kellogg, city clk., Mason, Mich. Bids Aug. 19. CD 8/9.

BUILDINGS—LB & CA

Frank Messer & Son, Inc., 4612 Paddock Bd., Cincinnati, O., LB **$117,600.** 1 story bsmnt., rein.-con. brick, POWER PLANT and LAUNDRY, CINCINNATI, O. St. Mary's Hospital, 816 Betts St., Cincinnati, O. Bids Aug. 29. CD 8/9.

Wigton Abbott Corp., 1225 South Ave., Plainfield, N. J. CA **$782,118**. RESEARCH LABORATORY, Amity Rd., CINCINNATI, O. Wm. S. Merrell Co., Amity Rd., Cincinnati, O. CD 6/28.

▲ **George A. Fuller Co.**, 597 Madison Ave., New York, N. Y. CA Est. **$9,000,000**. 25-story, air-conditioned OFFICE BLDG. with 400-car GARAGE, CINCINNATI, O. Milner Enterprises, Inc., Milner Bldg., Jackson, Miss. CD 8/15.

A. P. Ziegler Co., 40 Macy St., Dayton, O. LB **$646,450.** general contract, Fairmont HIGH SCHOOL, KETTERING, O. Bd. Educ., Kettering, O. Bids Sept. 5. CD 7/30.

▲ **H. W. Miller Constr. Co., Inc.**, Covington, Ky., LB **$2,439,000** general contract first phase of Lebanon Medium Security INSTITUTION, LEBANON, O. State Div. Corrections, State Office Bldg., S. Front St., Columbus, O. Bids Sept. 4. CD 8/13.

The A. Bentley & Sons Co., 201 Belmont St., Toledo, O. CA Est. **$494,000.** general contract 2 story SCHOOL addn., TOLEDO, O. Rosary Cathedral Parish, 2535 Collingswood Blvd., Toledo, O. Britsch-Macelwane & Assocs., 240 Sylvania St., Toledo, O., archts. CD 4/30.

▲ **The Henry J. Spieker Co.**, 1418 Elm St., Toledo, O., CA Est. **$2,000,000.** Girls Catholic HIGH SCHOOL, on 11-acre site at Anthony Wayne Trail and Brookford Dr., TOLEDO, O. Sisters of Mercy, affiliate with Province of Cincinnati of Sisters of Mercy, Fremont, O. Awarded Aug. 30. CD 7/19.

▲ **Hagerman Constr. Co.**, 403 Strauss Bldg., Fort Wayne, Ind. CA Est. **$3,000,000.** 1 story, 160,000 sq. ft., air-conditioned, tilt up concrete FACTORY on 71 acre Camp Scott site at S.E. edge of city bounded by Wayne Trace, Moeller Rd., and Pennsylvania R.R., FORT WAYNE, IND., Farnsworth Electronics Co., 3702 E. Pontiac St., Fort Wayne, Ind. A. M. Strauss, Inc., Strauss Bldg., Fort Wayne, Ind., archt. CD 7/19.

Remy Constr. Co., 5475 Massachusetts St., Gary, Ind. LB **$519,641.** 1 story, brick Indiana Street SCHOOL, 20th and Indiana, GARY, IND. City, 425 Garfield St., Gary, Ind. Frederick W. Collins, 400 W. 5th Ave., Gary, Ind., archt. CD 8/15.

Thos. Berling & Sons, 212 S. Temple St., Indianapolis, Ind., LB **$389,000**, general contract GRADE SCHOOL No. 2, E. St. Clair and New Jersey Sts., INDIANAPOLIS, IND. Bd. School Comrs., 150 N. Meridian St., Indianapolis, Ind. Bids Aug. 20. CD 8/6.

Schumaker Constr., Inc., E. Michigan St. and Warnge Rd., Michigan City, Ind. CA **$150,000**, design and construct 1 story FACTORY and OFFICE BLDG., N. Roeske Ave., MICHIGAN CITY, IND. Esco Electronic, Inc., 901 W. Huron St., Chicago, Ill.

Hagerman Constr. Co., 403 Strauss Bldg., Fort Wayne. LB **$804,406.** (3 bidders), general contract SENIOR HIGH SCHOOL and 3,200 seat GYMNASIUM, PORTLAND, IND. Bd. Educ., Portland-Wayne Twp. School Bldg. Corp., Portland, Ind. Bids Aug. 29. CD 8/16.

Thos. L. Hickey Contrs., 712 Niles St., South Bend, Ind., CA **$750,000**, DORMITORY and CHAPEL, SOUTH BEND, IND. Sisters of St. Joseph, 107 S. Greenlawn St., South Bend, Ind. Leo Strelka, River Forst, Ill., archt.

Morris Handler Co., 2720 W. Chicago Ave., Chicago, Ill., CA **$300,000**, 1 story, 45,000 sq. ft., brick FACTORY addn., CHICAGO, ILL. Bienenfeld Glass Corp., 1525 W. 35 St., Chicago, Ill. Ernest M. Mandel, 6410 N. Fairfield Ave., Chicago, Ill., archt.

Clearing Industrial Dist., 6455 S. Central Ave., Chicago, Ill., CA **$600,000**, 1 story, 65,000 sq. ft. FACTORY and OFFICE BLDG., 3717 Rhodes Ave., FRANKLIN PARK, ILL. Powell Mtl. Lath Co., Industrial Rd., Addison, Ill.

▲ **Bauer Constr. Co.**, 3411 W. Hopkins St., Milwaukee, Wis. CA **$1,049,000.** excav., concrete, masonry, carpentry and mill work for Muir Junior High SCHOOL, MILWAUKEE, WIS. Bd. School Directors, 1111 N. 10 St., Milwaukee 3, Wis. Bids Aug. 22, awarded Sept. 3. CD 8/28.

Worth Bros., 8460 N. Range Line Rd., Milwaukee, Wis., CA Est. **$150,000**, 1 story 72x229 concrete, steel, brick and blocks GARAGE, MILWAUKEE, WIS. Rank & Son, 3144 N. Green Bay Ave., Milwaukee, Wis. E. J. Schrang, 4411 N. Oakland Ave., Milwaukee, Wis., archt.

Barnes Constr. Co., 1310 Wallen St. S.W., Grand Rapids, Mich., CA **$426,873**, Elementary SCHOOL, Thunder Bay, ALPENA, MICH. Bd. Educ., Alpena Schools, Alpena, Mich. Norris & Wesolak, 55 Bay Shore Dr., Bay City, Mich., archts.

▲ **Alco Products, Inc.**, 1 Nott St., Schenectady 5, N. Y. CA Est. **$1,750,000**. three INTERMEDICAL SODIUM HEAT EXCHANGERS for the Enrico Fermi nuclear electric generating plant near DETROIT, MICH. Power Reactor Development Co., c/o Detroit Edison Co., 2000 2nd Ave., Detroit 2, Mich.

Fullerton Constr. Co., 19156 Filer St., Detroit, Mich., LB **$430,000**, general contract JUNIOR HIGH SCHOOL addn., FARMINGTON, MICH. Bd. Educ., Farmington School Dist., 33000 Thomas St., Farmington, Mich. Bids Aug. 26. CD 8/9.

August B. Johnson, Inc., 1949 Stanford St., Flint, Mich., CA **$421,970**, general contract GYMNASIUM addn. to high school, FENTON, MICH. Bd. Educ., Fenton, Mich. Warren S. Holmes Co., 2200 Mich. National Bldg., Lansing, Mich., archts.

MacDonald Constr. Co., Marquette, Mich., CA **$839,400**, general contract Intermediate SCHOOL, ISHPEMING, MICH. City, Bd. Educ., James P. Clancy, secy., Ishpeming, Mich. Warren S. Holmes Co., 2200 Mich. National Bank, Lansing, Mich., archts. CD 5/15.

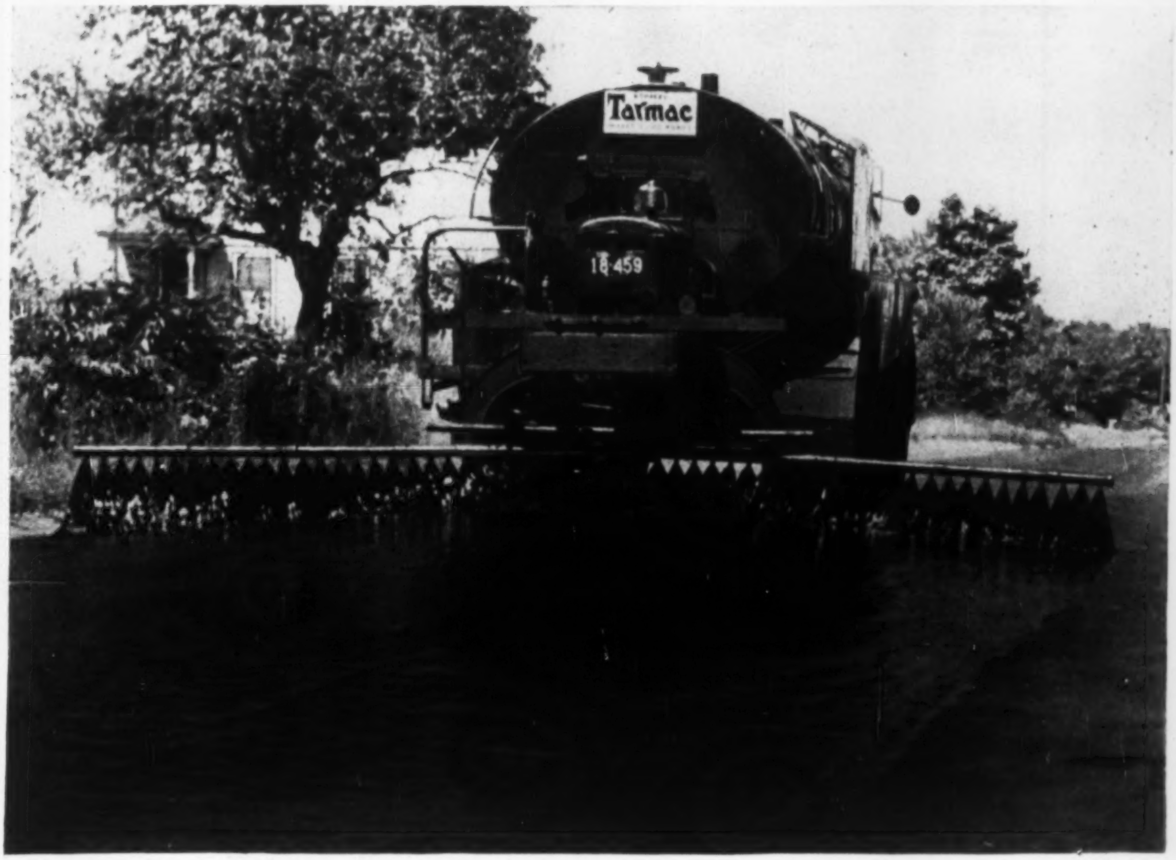
▲ **Spence Brothers**, 417 McCoskry St., Saginaw, Mich., CA **$2,600,000**. SERVICE CENTER, Weiss St. near Bay, SAGINAW, MICH. Consumers Power Co., Saginaw, Mich. CD 7/12.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Okla., Altus**—BUILDINGS ALTERATIONS—BA 9/25—U. S. Eng., P. O. Box 61, Tulsa, Okla., completed buildings alterations, Air Force Base, ENG-34-066-58-4, $100,000. CD 8/24/56.

(Continued on page 124)



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THE MAN WE MEAN IS A COMPOSITE of the editorial staff of this magazine. For, obviously, no one individual could ever accomplish such a vast business news job. It's the result of many qualified men of diversified and specialized talents.

AND, THERE'S ANOTHER SIDE TO THIS "COMPOSITE MAN," another complete news service which complements the editorial section of this magazine – the advertising pages. It's been said that in a business publication the editorial pages tell "how they do it" – "they" being all the industry's front line of innovators and improvers – and the advertising pages tell "with what." Each issue unfolds an industrial exposition before you – giving a ready panorama of up-to-date tools, materials, equipment.

SUCH A "MAN" IS ON YOUR PAYROLL. Be sure to "listen" regularly and carefully to the practical business information he gathers.

McGRAW-HILL PUBLICATIONS

† **Iowa**—BA 9/26—Soil Conservation Service, 405 Iowa Bldg., Des Moines, Zone 9, constr. of 14 flood prevention structures on Nutthollow Sub-watershed in Little Sioux Basin, located approximately 3 mi. north of Castana, Monona Co., Inv. SCS-4-IA-58. Plans deposit $25. CD 6/5/50.

MISSOURI—BA 9/26—State Hy. Dpt., Jefferson City,
Audrian Co.—two 34 ft., one 40 ft. precast slab spans, Sta. 24 plus 74, under $70,000.
Boone and Cooper Counties—approach steel for 15 plate girder spans, Sta. 147 plus 38.
truss spans and navigation lights; truss steel for two 550 ft. continuous truss spans.
Buchanan Co.—six 51 ft. continuous I-beam spans (twins) Sta. 600 plus 15.
three 50 ft rein.-con. deck girder spans (twins), Sta. 592 plus 64, all foregoing over $70,000 each.
Dallas Co.—three 11 ft. rein.-con. slab spans, Sta. 106 plus 07.
Greene Co.—two 9 ft. rein.-con. slab spans, Sta. 77 plus 25.
Holt Co.—two 10 ft. rein.-con. slab spans, Sta. 135 plus 80.
New Madrid Co.—three 34 ft. rein.-con. precast slabs.
three 21.5 ft. rein.-con. precast slabs.
three 21.5 ft. rein.-con. precast slabs.
one 47 ft., two 35 ft. I-beam spans.
one 34 ft, two 27.75 ft. rein.-con. precast slabs.
three 27.75 ft. rein.-con. precast slabs.
Warren Co.—three 11 ft. rein.-con. slabs, Sta. 461 plus 32, all foregoing under $70,000 each. Rex Whitton, ch. engr.

MISSOURI—BA 9/26—State Hy. Dpt., Jefferson City,
Audrian Co.—graded earth, surf. 0.5 mi., under $70,000.
Boone and Cooper Counties—graded earth, and approach substructures, Sta. 1474 plus 38, over $70,000.
Boone Co.—graded earth, surf. 3.61 mi., under $70,000.
graded earth, surf. 3.454 mi., under $70,000.
Buchanan Co.—graded earth, 0.444 mi., over $70,000.
graded earth 0.351 mi., over $70,000.
Christian Co.—graded earth, surf. 2.55 mi.
Dallas Co.—graded earth, surf. 6.96 mi.
graded earth, surf. 2.624 mi.
Dent Co.—gran. surf. 5.239 mi., all foregoing under $70,000 each.
Greene Co.—graded earth, paving 0.757 mi.
graded earth, pav't. wid'n. 0.499 mi., foregoing over $70,000 each.
Johnson Co.—graded earth, surf. 2.596 mi.
Holt Co.—graded earth, surf. 4.988 mi.
Madison Co.—gran. surf. 1.679 mi.
Monroe Co.—graded earth, surf. 0.251 mi.
Nodaway Co.—oil surf. 3.012 mi.
New Madrid Co.—gran. surf. 6.764 mi.
gran. surf. 7.133 mi.
Pettis Co.—graded earth, surf. 2.302 mi.
graded earth, surf. 4.573 mi.
Polk Co.—graded earth, surf. 5.844 mi.
St. Clair Co.—graded earth, surf. 0.142 mi.
Scotland Co.—graded earth, surf. 3.75 mi.
Shelby Co.—graded earth, surf. 3.652 mi.
graded earth, surf. 0.703 mi.
Warren Co.—graded earth, surf. 0.369 mi.
graded earth, surf. 0.367 mi., all foregoing under $70,000 each. Rex Whitton, ch. engr.

† **N. D., Fargo**—VORTAC FACILITY—BA 9/26—Civil Aeronautics Admin., Federal Office Bldg., Kansas City, Mo., Vortac Facility, No. 3-58-9.

Iowa, Meservey—BA 9/30—Town, WW imprvs., involving 50,000 gal. water tank on 100 ft. tower with foundations, driling 10 in. well, approx. 500 ft. deep with 240 ft. 10 in. casing, grouting, appurtenances, 650 ft. 4 in. c.i. pipe, etc. $44,000. Plans deposit $15. Extended date. Rowat-Murray, Belmond, engrs. CD 8/26.

BUILDINGS—BA

Tex., San Antonio—HOSPITAL—BA 9/24—San Antonio Osteopathic Hospital, c/o O. E. Wurzbach, Hausman Rd., osteopathic hospital $350,000. Dukes & Williams, 728 W. Hildebrand St., archts.-engrs. Reynolds & Morgan, c/o Insurance Bldg., and Halsey & Royer, 120 W. Grayson St., engrs. CD 3/25.

Minn., Hoyt Lakes—SCHOOL—BA 9/26—Bd. Educ., Independent School Dist. No. 13, Aurora, M. Brown, clk., Aurora, elementary school. $600,000. Jyring & Whiteman, Hibbing, archts.

Mo., Warrensburg—DORMITORIES—BA 9/26—Central Missouri State College, Bd. Regents, James C. Kirkpatrich, chn., Warrensburg, two 5 story rein.-con., frame, brick, dormitory buildings, $860,000. Extended date. Everitt & Keleti, 4550 Main St., Kansas City, Mo., archts. CD 8/27.

▲ **Tex., San Antonio**—HOSPITAL—BA 9/26—Santa Rosa Children's Hospital Fdn., W. Houston and Santa Rosa Sts., children's hospital and out-patient clinic. $1,500,000 O'Connell & Probst, 504 W. 7th St., Austin and Phelps & DeWees & Simmons, 342 W. Woodlawn St., San Antonio, archts. Frank T. Drought, 342 W. Woodlawn St., and Gerard M. Baker, Box 8127 Laurel Heights Station, engrs. CD 12/19.

Tex., Port Lavaca—COURTHOUSE, etc.—BA 10/4—Calhoun Co., c/o Comrs. Court, Port Lavaca, 3 story, 35,000 sq. ft. courthouse and jail. $400,000-$800,000. Extended date. Rustay & Martin, 1811 Crawford St., Houston, archts. CD 9/3.

† **Colo., Pueblo**—HOUSING—BA 10/22—U. S. Eng., 1709 Jackson St., Omaha, Neb. Capehart permanent family housing Pueblo Ordnance Depot, Inv. 25-066-58-18. CD 7/16, under LB.

BUILDINGS—SLC

▲ **Ark., Little Rock**—HOSPITAL—Missouri Pacific Employees Hospital Assn., H. J. Mohler, pres.,

(Continued on page 126)

WHY send a man to do a boy's work?

As you travel around the country, you see a lot of big graders pushing just a "hat-full" of dirt . . . rolling a blade-load that any team of horses and a split log could handle. This light work needs doing, and the big graders do a good job. But an efficient 60 or 80 hp grader could perform these same tasks just as well . . . at much lower cost.

Sure, standardizing your fleet on powerful Adams* 660's (or other 150 to 190 hp graders), simplifies your operation. It gives you grader power for any work, using machine nearest the job-site. But, when modern graders travel at speeds of 18 to 27 mph, is that "nearest grader" idea so important?

Handle light grading at lower cost per job

You may find it profitable to look at lighter weight "blades" . . . the 80 hp Adams 330, for around $14,000 FOB . . . or the 60 hp Adams 220 for just over $10,000 factory list. By using either of these machines on your lighter work, you can greatly reduce your investment and ownership costs. And you'll save on maintenance and operating expense, too.

Releases your big graders for more profitable work

When you relieve your heavy-duty graders of the work in shallow cuts and light materials, they too, can earn you a better profit. You concentrate your big grader power where you can put its extra "muscle" to full use . . . spreading big-volume dirt, scarifying, making heavy cuts, turning or casting high windrows, ripping down heavy side-banks, cutting deep ditches, etc. This way, your big machines move more yardage . . . show a larger profit for every hour's work.

Sized-to-job graders raise fleet output

With your big machines assigned to heavy work, and lighter machines to lesser tasks, every grader works nearer to full rated power . . . produces nearer its maximum output. You handle all jobs at *lowest possible* cost . . . end-up with a bigger net profit on every contract.

Size your graders to the jobs they have to do. For light work choose a 60 or 80 hp Adams . . . for general duty, an Adams of 115 or 123 hp . . . for heaviest construction, a 150 or 190 hp Adams 660. Call or write for complete details, and let us arrange a demonstration.

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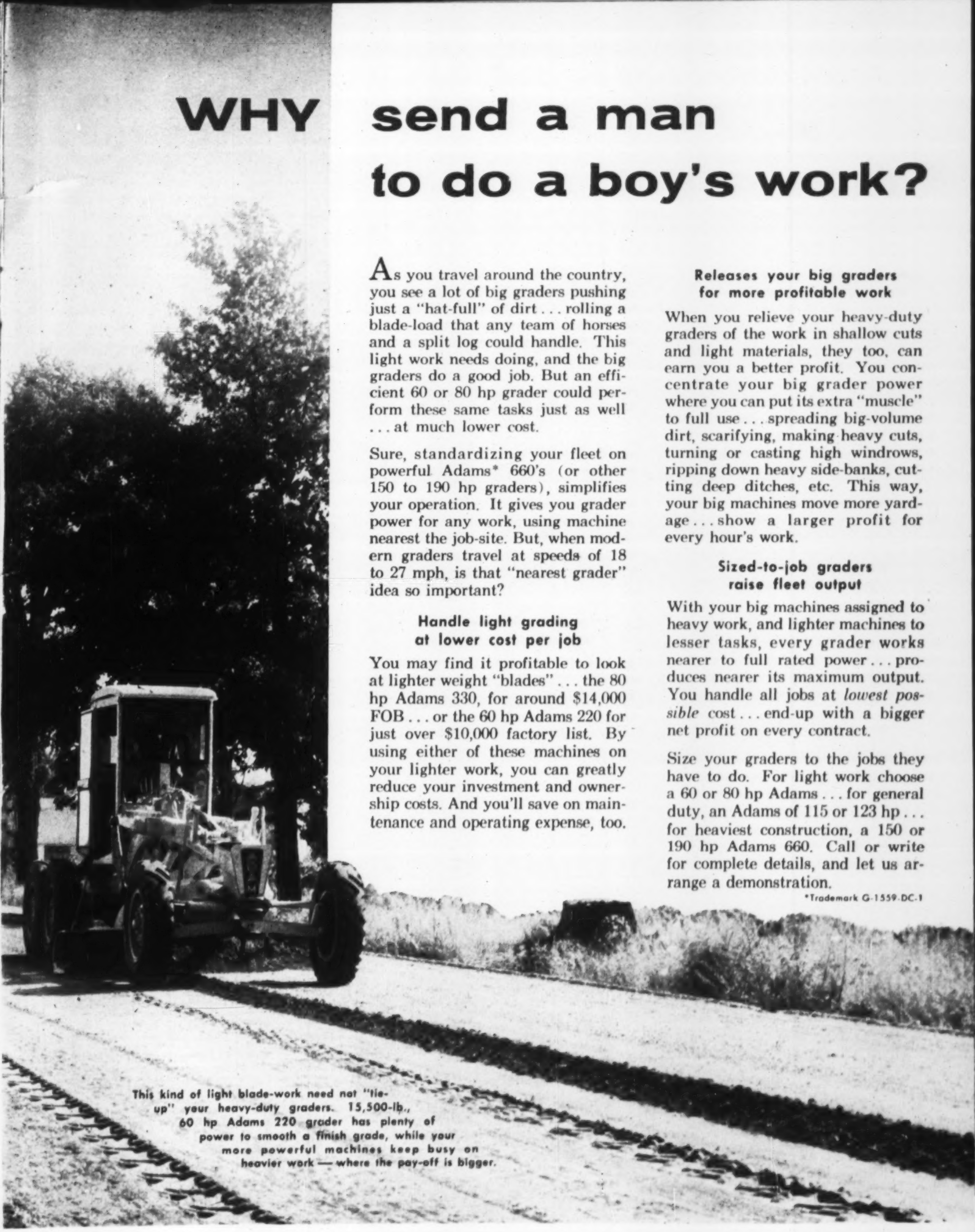


This kind of light blade-work need not "tie-up" your heavy-duty graders. 15,500-lb., 60 hp Adams 220 grader has plenty of power to smooth a finish grade, while your more powerful machines keep busy on heavier work — where the pay-off is bigger.

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

(Continued from page 124)

Missouri Pacific Hospital, 1310 Lincoln St., soon lets contract 4 story, 50,000 sq. ft. 150 bed hospital addn. $1,000,000. Richard W. Groh, 807½ W. 3rd St., archt. H. Allen Gibson, Riegler Bldg., structural engr. CD 6/6.

Okla., Shawnee—DORMITORY Baptist General Convention, 1141 N. Robinson St., Oklahoma City, soon lets contract, dormitory at Oklahoma Baptist Dormitory, $700,000. Noftsger & Lawrence, 2756 N.W. 23 St., Oklahoma City, archts. CD 5/24.

HEAVY CONSTRUCTION—LB & CA

MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

St. Paul Structural Steel Co., 162 York Ave., St. Paul, Minn., LB **$523,349**. fabricating, del. structural metal for bridges 6581 and 6582 to carry the Soo Line R.R. tracks over hy. at Cardigan Junction near Rice St. north of St. Paul.

† **Park Constr. Co.,** 51 37 Ave. N.E., Minneapolis, Minn., LB **$58,698** (4 bidders) fill, access road, utilities at Lower Lock and Dam, St. Anthony Falls, Mississippi River, CIVENG-21-018-58-7, MINNESOTA. U. S. Eng., 1217 U. S. Post Office & Custom House, St. Paul 1, Minn. Bids Sept. 5. CD 8/21.

W. Nielsen Co., 1530 Saddle Creek Rd., Omaha, Neb., CA **$53,685** (3 bidders) County Ditch No. 121, JACKSON, MINN. Jackson Co., E. H. Dahl, aud., Jackson, Minn. CD 8/16.

Thornton Bros. Co., 1343 Dayton Ave., St. Paul, Minn., LB **$129,000** (4 bidders) grading, repaving Wabasha St. from Ninth St. to 60 ft. north of Columbus Ave. resurf. part of 10 St., grading, paving parts of College Ave. and 12 St., ST. PAUL, MINN. City. O. P. Mason, Jr., city purch. agt., 253 City Hall, St. Paul, Minn. Bids Sept. 3. CD 7/26/56.

Linner Electric Co., Stillwater, Minn., CA $81,065 street lighting system in business district, incl. 17 blocks, 87 lights, STILLWATER, MINN. City, L. E. Brewer, clk., Stillwater, Minn. Bids Aug. 6. CD 8/23, under LB.

Willman Co., Hiawatha, Iowa, LB **$86,642** (6 bidders), Groups 1 and 2, apron paving road wid'n. and apron lighting at municipal airport, CEDAR RAPIDS, IOWA. City, City Hall, Cedar Rapids, Iowa. Bids Aug. 26. CD 8/16.

F. W. Forst Constr. Co., WOW Bldg., Omaha, Neb., CA **$77,443 (9 bidders), sewers,** IRETON, IOWA, City, City Hall, Ireton, Iowa. Bids Aug. 20. CD 8/9.

† **Procurement Office,** Sioux City Air Force Base, Sioux City, Iowa, rejected bids June 24, tacan facility at air base, SIOUX CITY, IOWA. CD 6/21.

Gjellefald Assocs., Forest City, Iowa, CA **$177,095** (5 bidders), Kenwood Park Storm Sewer, WATERLOO, IOWA, City, City Hall, Waterloo, Iowa. Bids Aug. 20. CD 11/17/44.

▲ **MISSOURI**—State Hy. Dpt., Jefferson City,

Mo.—**J. A. Tobin Constr. Co.,** 3701 Rainbow Blvd., Kansas City, Mo., CA **$185,295,** b. conc., c. conc. pavt. 0.908 mi. Newton Co.; CA **$92,535,** c. conc. 0.313 mi. Jasper Co.; CA **$193,834,** wid'n. c. conc. 1.6 mi. Jasper Co.; CA **$740,244,** b. conc., c. conc. wid'n. 3.669 mi. Jasper Co.;

Mo.—**Tri-city Asphalt & Thompson Asphalt Co.,** 6 and McCambridge, Madison, Ill., CA **$195,979,** b. conc. 3.748 mi. Dunklin Co.; CA **$318,742,** b. conc. 6.249 mi. Pemiscot Co.;

Mo.—**Masters-Jackson Paving Co.,** 1850 E. Sunshine, Springfield, Mo., CA **$108,566,** wid'n., b. conc. 1.715 mi. Greene Co.;

Mo.—**Welton Ideker,** Mound City, Mo., CA **$89,612,** gran. or crushed stone surf. 1.056 mi. Nodaway Co.;

Mo.—**Granite Bituminous Paving Co.,** 3943 Duncan Ave., St. Louis, Mo., CA **$542,384,** b. conc. 11.324 mi. Pemiscot Co.;

Mo.—**Roy Athol Davis,** Springfield, Mo., CA **$98,036,** gran. surf. 13.241 mi. Washington Co.;

Mo.—**Howard Constr. Co.,** 1504 N. Osage, Sedalia, Mo., CA **$450,221,** rolled stone base, b. conc. 6.02 mi. DeKalb Co.; CA **$81,127,** crushed stone surf. 7.512 mi. Cedar Co.;

Mo.—**Clark & Farmer Constr. Co., Inc.,** Camdenton, Mo., CA **$83,777,** grav. or crushed stone surf. 6.994 mi. Gentry Co. Grand total $3,180,352. Bids Aug. 27. CD 8/13.

MISSOURI—State Hy. Dpt., Jefferson City,

Mo.—**J. A. Tobin Constr. Co.,** 3701 Rainbow Blvd., Kansas City, Mo., CA **$101,786,** three 45 ft. rein.-con. deck girder spans, Sta. 550 plus 02, Jasper Co.; CA **$91,919,** two 42 ft., one 50 ft. beam spans, Sta. 194 plus 57, Jasper Co.;

Mo.—**Universal Bridge Co.,** 1200 S. W. Blvd., Kansas City, Mo., CA **$224,389,** one 95 ft, three 75 ft., two 52.5 ft., two 30 ft. I-beam spans, Sta. 40 plus 15, Cole Co.;

Mo.—**John R. Burton,** Montgomery City, Mo., CA **$100,584,** one 47 ft., two 70 ft., one 85 ft. continuous I-beam spans, Sta. 497 plus 94, Osage Co.;

Mo.—**James Gould,** 3527 Broadway, Kansas City, Mo., CA **$83,395,** two 75 ft., one 90 ft., continuous I-beam spans, Sta. 378 plus 58, Sullivan Co. Grand total $602,073. Bids Aug. 27. CD 8/13.

R. A. Waffensmith, Deerfield, Minn., CA **$207,116** (7 bidders) 277.31 mi. telephone lines, Towner and Cavalier Counties, NORTH DAKOTA. United Telephone Mutual Aid Corp., Langdon, N. D. Bids Aug. 21. CD 8/9.

▲† **Al Johnson Constr. Co.,** Foshay Tower, Minneapolis, Minn., LB **$3,132,672** (5 bidders) substructure of C. M. St. Paul & Pacific R. R. Co. Bridge over Missouri River, Oahe Reservoir, near Mobridge, Bonus Co., Inv. 25-066-58-3, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Sept. 4. CD 8/26.

KANSAS—State Hy. Comn., State Office Bldg., Topeka,

J. A. Tobin Constr. Co., 3701 Rainbow Blvd., Kansas City, Kan., CA **$917,314**. c. conc. 0.585 mi. Proj. 40-105, I-080-1 (2) Wayndotte Co. Bids Aug. 29. CD 9/6, under LB.

† **Edward J. Cerovski,** Sargent, Neb., LB **$210,330,** est. $243,469 (9 bidders) levee, channel, appurtenances, State 1, new and improved channel for Mudd creek, levees and appurtenant structures on both banks, Abilene, CIVENG-23-028-58-13, KANSAS. U. S. Eng., 1800 Federal Office Bldg., Kansas City 6, Mo. Bids Sept. 4. CD 8/6.

Wilmoth Constr. Co., Salina, Kan., LB **$318,058**. Salina Municipal Airport imprvs., incl. clearing, seeding, grading, drainage, paving, fencing, marking and airport lighting, etc. SALINA, KAN. City, H. E. Peterson, clk., City Hall, Salina, Kan. Bids Aug. 27. Wilson & Co., 705 E. Crawford St., Salina, Kan., engrs. CD 9/5/56.

M. M. Small, 1619 W. 2 St., Topeka, Kan., CA **$97,847**. street resurf., TOPEKA, KAN. City, City Hall, Topeka, Kan. CD 7/29.

McCabe Bros., Wilburton, Okla., CA **$91,780,** est. $99,590 fishing and game reservoir near Tuskahoma, Pushamataha Co., OKLAHOMA. Game & Fish Comn., Capitol, Oklahoma City 5, Okla. Bids Sept. 4. CD 8/28.

Burbank Rock Co., Ponca City, Okla., LB **$101,406,** est. $100,000. parking yards at dormitories on Oklahoma State University Campus, STILLWATER, OKLA. Oklahoma State University, Stillwater, Okla. Phillip A. Wilber, c/o owner, engr. CD 2/23/50, under Public Buildings.

Delta Eng. Corp., 2121 San Felipe Rd., Houston, Tex., CA **$181,000** 70 mi. natural gas gathering lines, Midland, TEXAS. Cities Service Oil Co., Midland, Tex. and Bartlesville, Okla. CD 12/7.

TEXAS—State Hy. Comn., Austin,

cancelled bids to have been opened Sept. 17, grading and structures 1.791 mi. Hy. U. S. 81 Proj. I 75 (4) Falls Co.; grading structures, base surf. and c. conc. 2.264 mi. Hy. FM 1495 Proj. R 587-1-7, Brazoria Co. CD 8/23.

TEXAS—State Hy. Comn., Austin,

cancelled bids to have been opened Sept. 18, grading, structures, base and surf. 9.623 mi. Hy. FM 1743 & FM 2320 Proj. S 1585 (2) & S 2176 (2), Fannin Co. CD 8/23.

† **Gulf Constr. Dredging Co., Inc.,** Box BB, Port Lavaca, Tex., LB **$237,000,** est. $80,000. dredging in Baffin Bay and Mud Flat area, near Kingsville, in Kleberg and Kennedy Counties, ENG-41-243-58-4, TEXAS. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids Aug. 23. CD 8/13.

▲ **McVean & Barlow,** Kermit Hy., Odessa, Tex., CA approx. **$2,500,000**. 250 mi. 6 in. products line from Odessa to El Paso, Odessa, TEXAS. El Paso Natural Gas Products Co., El Paso Natural Gas Co. Bldg., El Paso, Tex. CD 10/9.

Medina Electric Co-operative, Hondo, Tex., Owner Builds. **$90,000** tie line work, **$100,000** distribution line repairing and imprv., Hondo, Medina Co., TEXAS, CD 5/22.

† **Standard Dredging Corp.,** 320 Cotton Exch. Bldg., Galveston, Tex., LB **$199,324,** est. over $100,000. dredging in Texas City Channel, Texas City, Galveston Co., ENG-41-243-58-7, TEXAS. U. S. Eng., 608 Santa Fe Bldg., Galveston, Tex. Bids Aug. 28. CD 11/6/52.

† **Gilvin-Terrill, Inc.,** 413 E. 3rd St., Amarillo, Tex., LB **$616,637,** est. $643,867 relocating Rock Island R.R. in Amarillo Air Force Base, ENG-34-066-58-1, AMARILLO, TEX. U. S. Eng., Box 61, Tulsa, Okla. Bids Sept. 5. CD 8/26.

Jefferson County Fresh Water Dist. No. 2, Beaumont, Tex., Purchase and Hire. **$70,000,** water laterals Voth-Rosedale area, BEAUMONT, TEX.

Jefferson County Fresh Water Dist. No. 2, Beaumont, Tex., Purchase and Hire. **$88,000,** repairing, replacing sanitary sewer lines, Voth-Rosedale area, BEAUMONT, TEX.

Dale Benz, Inc., 1912 W. Grant St., Phoenix, Ariz., LB **$125,000** remodeling sports arena bldg. and stock exhibits bldg., BORGER, TEX. Potter Co., c/o Tri-State Fair Grounds, Borger, Tex. Bids Aug. 19.

City, City Hall, Carrollton, Tex., Purchase and Hire. **$45,000,** earth drainage, CARROLLTON, TEX.

City, City Hall, Carrollton, Tex., Purchase and Hire. **$75,000** street repairing and reworking, CARROLLTON, TEX. CD 4/24.

J. E. Morgan & Sons, Box 2069, Houston, Tex., CA **$706,842,** hangar and maintenance facilities, DALLAS, TEX. American Air Lines, 100 Park Ave., New York, N. Y. Bids Aug. 5. CD 8/15, under LB.

P & L Equipment Co., Box 13007, Houston, Tex. CA **$672,603** railroad underpass, Studewood-Montrose Connection, Contr. 3, HOUSTON, TEX. City, City Hall, Houston, Tex. Bids Aug. 16. CD 9/6, under LB.

† **Mitchell Darby Constr. Co.,** Box 169, McAllen, Tex., LB **$174,300** off-site work for 345 family housing units proj., IFB 41-641-58-2, LAREDO, TEX. Purch. & Contg. Office, Hdqrs. No. 364 Pilot Training Wing (Base) Box 999, Laredo Air Force Base, Laredo, Tex. CD 10/22/54.

Clyde Smith, Box 791, Austin, Tex., $136,312, sewage treatment plant, LEWISVILLE, TEX. City, City Hall, Lewisville, Tex. Forrest & Cotton, 600 Vaughn Blvd., Dallas, Tex., engrs. CD 8/1, under LB.

Delta Eng. Corp., 2121 San Felipe Rd., Houston, Tex. CA **$55,000** drainage and earthwork in Gasoline Plant area, MIDLAND, TEX. Cities Service Oil Co., Midland, Tex., and Bartlesville, Okla. CD 5/24.

† **Carhart Constr. Co.,** Box 6711, Alamo Heights, San Antonio, Tex. LB **$255,904** air-conditioning Bldg. No. 905, Inv. No. 41-606-58-20, RANDOLPH AIR FORCE BASE, TEX. U. S. Govt. Base Procurement Office, Bldg. 224, Randolph Air Force Base, San Antonio, Tex. CD 10/8/53.

City, City Hall, San Antonio, Tex., Owner Builds. **$110,000**. storm sewers, repairing, replacements, **$85,000** misc. sanitary sewer line repairing, reconditioning, SAN ANTONIO, TEX. CD 9/19/52.

City, City Hall, San Antonio, Tex., Owner Builds. **$90,000** misc. street surf., imprvs., SAN ANTONIO, TEX. CD 9/19/52.

City Water Bd., 106 W. Market St., San Antonio, Tex., Owner Builds. **$93,000**, increasing water supply areas Montana, Waters, Essex, New Braunfels, **$109,339**. increasing water supply and imprv. supply in NW section of SAN ANTONIO, TEX. CD 8/6.

Brodie-Enix Constr. Co., Box 2064, Amarillo, Tex., CA **$614,200** sewerage sys. imprvs., SWEETWATER, TEX. City, City Hall, Sweetwater, Tex. Homer A. Hunter Assocs., 3708 Abrams Rd., Dallas, Tex., engrs. M. D. Shipley, c/o owner, city engr. CD 10/12.

McKinney Bros., Victoria, Tex., CA **$79,180** sanitary sewer lines. TOM BALL, TEX., City, City Hall, Tom Ball, Tex.

McKinney Bros., Victoria, Tex., CA **$73,659,** water sys. imprvs., mostly 8½ mi. 2- to 6-in. pipe, TOM BALL, TEX., City, City Hall, Tom Ball, Tex. CD 10/19.

▲ **WYOMING**—State Hy. Dpt., Cheyenne, Bids opened 8/22,

Wyo.—**Forgey Bros. Co.,** Casper, Wyo., LB **$165,091** est. $206,258 (8 bidders), selected mat. surf., base course surf., base stab., one 4 ft.-0 in. x 6 ft.-0 in. rein.-con. cattlepass, four bit. coated siphons C.M.P. and misc. work 4.991 mi. The Worland-Neiber Rd., Wyo. Proj. No. S-2201(1), Washakie Co.; LB **$107,602,** est. $147,743 (8 bidders), grading, draining and misc. work 6.236 mi. The Greybull River Rd. State Proj. No. SC-CFM 4134 Unit II, Park Co.;

Wyo.—**Woodward Constr. Co.,** Rock Springs, Wyo., LB **$126,826,** est. $132,294 (4 bidders), base course surf., oil treat., stone chip seal coat and misc. work 5.304 mi. The Bedford-Turnerville Rd., State Proj. No. SC-CFM 4489, Lincoln Co.;

Wyo.—**Frontier Elec. Supply Co.,** Cheyenne, Wyo., LB **$58,156**, est. $83,297 (5 bidders), furnishing standards together with bolts, transformer bases, bracket arms, tie roads, etc. to be delivered to Wyo. Hy. Dpt. f.o.b. cars or trucks at their shops, 1108 West 22nd St., Cheyenne, Wyo. for Cheyenne Urban Sys. (Hynds Blvd. Rte., Wyo. Proj. No. I-223 (14), I-223(16) Unit II, I-223(17) Unit II, F-134 (5), F-223(20) and I-223 (19), Laramie Co.;

Wyo.—**Wyoming Paving,** Riverton, Wyo., LB **$108,111,** est. $151,850, plant mixed surf. course, stone chip seal coat and misc. work 14.617 mi. The Riverview Rd., State Proj. No. SC-CFM 3742 Unit III, Fremont Co.;

Wyo.—**Knisely-Moore Co.,** Douglas, Wyo., LB **$261,912,** est. $323,408 (6 bidders), grading, drainage, constr. twin 3 composite wide flange girder span separation structure over C. & S. Railway tracks and misc. work 0.227 mi. Cheyenne Urban Sys. (Hynds Blvd. Rte.), Wyo. Proj. No. I-223(19) Unit I, Laramie Co.;

Wyo.—**Husman Bros., Inc.,** Sheridan, Wyo., LB **$189,107** est. $192,075 (6 bidders), selected mat. surf., base course surf., surf. treat., one bridge consisting 5 continuous rein.-con. slab spans over Lodgepole Creek and misc. work 3.693 mi. The Newcastle-Clareton Rd., Wyo. Proj. No. S-2300(2), Weston Co.;

Wyo.—**Platte Valley Constr. Co.,** Grand Island, Neb., LB **$677,550,** est. $823,750 (16 bidders), grading, draining, I-double and 2-single structural plate pipe culverts and misc. work 5.369 mi. four-lane divided hy. The Wheatland-Chugwater Rd. from Chugwater north, Wyo. Proj. No. I-093-2(2) Unit I, Sect. II, Platte Co.;

Wyo.—**Asbell Bros. Constr. & Wyoming Paving,** Riverton, Wyo., LB **694,569,** est. $817,703 (17 bidders), grading, 3 structural plate pipe arch culverts and misc. work 5.123 mi. Sect. I of four-lane divided hy. and for selected mat. surf., plant mixd base course and misc. work on south-bound lanes 10.492 mi. Sects. I and II of four-lane divided hy. The Wheatland-Chugwater Rd. from Chugwater north, Wyo. Proj. No. I-093-2(2) Unit I, Sect. I, Platte Co.

WYOMING—State Hy. Dpt., Cheyenne, Bids opened 8/22,

Wyo.—**Chas. M. Smith,** Thermopolis, Wyo., LB **$329,976** est. 397,101 (15 bidders), constr. one twin 3-continuous rein.-con. slab span bridge, one twin 4-continuous rein.-con. slab span bridge, one rein.-con. box stockpass; three separation structures consisting two 4-continuous WF girder spans and one twin 3 continuous rein.-con. slab spans and misc. work on four lane divided hy. The Wheatland-Chugwater Rd. from Chugwater north, Wyo. Proj. No. I-093-2(2) Unit I, Platte Co.;

Wyo.—**Rognstad-Olson Constr. Co.,** Casper, Wyo., LB **$246,203,** est. 274,450 (6 bidders), underpass structure consisting one-154 ft.-10½ in. through truss span and two-49 ft.-0 in. WF beam spans under C.B. & Q. RR "F" Street Rte. of Casper Urban Sys., Wyo. Proj. No. I-225(6) Sec. II, Natrona Co.

COLORADO—State Hy. Dpt., 4201 E. Arkansas St., Denver,

Northwestern Eng. Co., P.O. 567, Denver, Colo., CA **$352,173,** est. $364,000. plant mix asph. surf.

(Continued on page 128)

Ideal for work in close quarters on housing project

The city of Calgary, Alberta, is building a system of city lanes (alleys) in an area of new homes on the west side of the city. To handle the necessary earthmoving, the city rented two D Tournapulls — one from A. Baldwin, the other from Jefferies and Sons Ltd. Tournapulls worked under the supervision of the City Engineering Department.

Build "T" shaped lanes

On the day photographs were taken, each Tournapull was building a "T" shaped lane (alley). Tournapulls self-loaded up to 5 pay-yards of gravel and sandy silt — working either across top of "T", or up stem. When excavating up stem, "D" starts cut toward lane intersection . . . continues to load right up to, during, and after making 90° turn . . . completes right-angle cut on lane across top of "T". Continuous loading reduces cycle time . . . moves more yards per hour . . . completes job sooner.

Low land brought up to housing grades

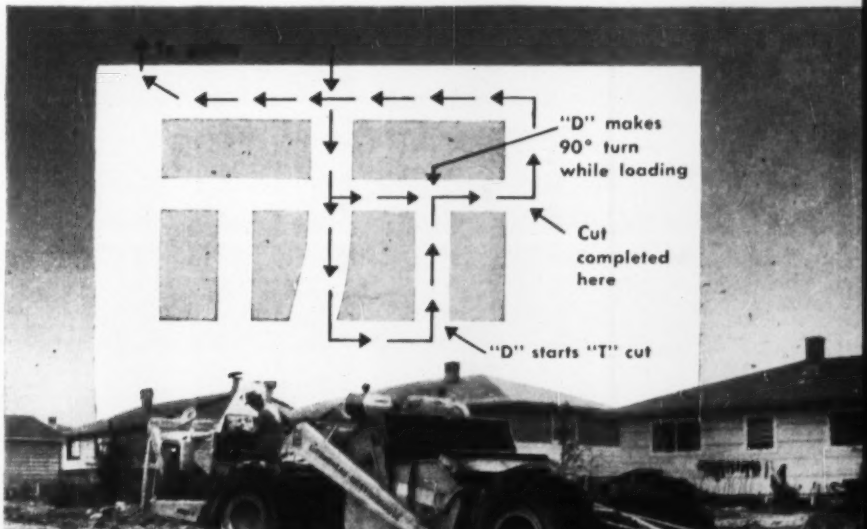
Tournapulls hauled material to nearby gulley, where it was spread to bring up lowland to housing grades. "The 'D' is ideal for this kind of work," says operator Neil Lauchlin. "You can really maneuver around these tight spots. It's good and fast, too!"

Turns 180° in 24′3″

Tournapull's positive electric kingpin power steer enables rig to turn around non-stop in an area only 24′3″ wide . . . less than its own length. Rig can work in tight quarters and between buildings where other units cannot readily maneuver. "D's" eliminate time normally wasted shuttling back and forth to turn in restricted areas. No special turn-around areas need be excavated. Fast maneuvering Tournapull swings into cut position quickly. If pusher is used, it need not sit idle while scraper operator wastes time on a wide sweeping turn, and then on long, slow back-in.

Investigate today

Check the new improved D Tournapull. Find out what its short turn radius and high speeds can do for *you*. New "D" now gives you 9 cu. yds. heaped capacity. With 8′ wide road clearance and axle-load within 9-ton limit, rig can be roaded almost anywhere without special permit. Send for complete details.



Loading in restricted quarters, D Tournapull negotiates sharp 90° loading turn — self-loads up to 5 pay-yards of gravel and sandy silt, grading for Alberta City lanes. Electric motors accurately control scraper blade, apron and tailgate as well as kingpin steer.

Tournapull—Trademark Reg. U.S. Pat. Off. DP-1230-H-b

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

(Continued from page 126)

5.297 mi. Wildhorse, Colo. Proj. F 017-3 (6), Cheyenne Co. Bids Sept. 4. CD 8/29.

▲ **COLORADO**—State Hy. Dpt., 4201 E. Arkansas St., Denver,
Colo.—**Z. H. Lowdermilk, Inc.**, 1950 W. Dartmouth St., Englewood, Colo. CA **$489,303**, est. $420,000 plant mix asph. surf. 2.969 mi. State Hy 106, Cortez, Colo. Proj. F 023-1 (5) Montezuma Co.,
Colo. **Winslow Constr. Co.**, Englewood, Colo. CA **$728,903**. plant mix asph. surf. 13.964 mi. Idalia, Combined Colo. Projs. C 19-0102-12 and F 013-1 (3), Yuma Co. Bids Aug. 30, awarded Aug. 30.

Davis Constr. Co., Provo, Utah. LB **$46,389**, est. $44,000, water treatment plant, CLIFTON, COLO. Clifton Water Dist., Clifton, Colo. Ripple & Howe, 833 23 St., Denver, Colo., engrs.-archts. Bids Aug. 30.

▲ **The Four-Way Company, Inc.**, Aztec, N. M., CA Est. **$3,750,000. laying 150 mi. 16** in. crude line starting from Aneth Field and running toward Jal, N. M. Section No. 1, NEW MEXICO, ARIZONA and UTAH. Texas-New Mexico Pipe Line Co., Melrose Bldg., Houston, Tex. CD 1/11.
Panama, Inc., Commerce Bldg., Houston, Tex., CA Est. **$6,550,000. laying 262 mi. 16** in. crude line on lower end of proposed line between Aneth or 4-Corners to Jal, N. M. sections 2 and 3 (New Mexico, Arizona and Utah).

† **U. S. Eng.**, P.O. Box 1538, Albuquerque, N. M., cancelled bids to have been opened July 26, readiness crew and facilities, Kirtland Air Force Base, ENG-20-005-58-1, ALBUQUERQUE, N. M. **$200,000**. CD 7/19.

† **U. S. Eng.**, P. O. Box 1538, Albuquerque, N. M., cancelled bids to have been opened July 30, fire station crash and structural work, Clovis Air Force Base, ENG-29-005-57-108, CLOVIS, N. M. CD 7/19.

BUILDINGS—LB & CA

C. H. Peterson Constr. Co., 4020 Minnetonka Blvd., Minneapolis, Minn., CA **$966,400**. general contract 1 story 150x500 ft., JUNIOR HIGH SCHOOL, Coon Rapids, ANOKA, MINN. Bd. Educ., Anoka-Hennepin Independent School Dist. No. 220, Anoka, Minn. Bids Aug. 28. CD 9/5, under LB.

▲ **Fowler-Veranth Constr. Co.**, 303 S. 1 Ave. East, Duluth, Minn. LB **$2,195,000** general contract HIGH SCHOOL, BABBITT, MINN. Bd. Educ., J. Patiska, Jr., clk., Babbitt, Minn. Bids Aug. 27. CD 8/1;
Modern Plumbing & Heating Co., Virginia, Minn. LB **$446,600,** mechanical work for high school (Babbitt, Minn.);
Collins Electric Co., Babbitt, Minn. LB **$363,698** electrical work for high school (Babbitt, Minn.).

Lenci, Lenci & Englund, Inc., Virginia, Minn., LB **$507,894,** 1 story, part bsmnt., L-shaped, 20,000 sq. ft. HOSPITAL, EVELETH, MINN. City, E. A. Taipale, clk., Eveleth, Minn. Bids Sept. 3. CD 8/8.

Robin Hood Constr. Co., 1143 Dupont Ave. S., Minneapolis, Minn., Owner Builds, **$100,000**. 1 story, 104x238 ft. WAREHOUSE, 2129 Broadway St. N. E., MINNEAPOLIS, MINN. Ackerberg & Cooperman, 1216 Nicollet Ave., Minneapolis, archts.

▲ **Northern States Power Co.**, A. S. King, pres., 15 S. Fifth St., Minneapolis, Minn., Owner builds $3,000,000 building only, Total est. **$24,000,000**. constr. 150,000-170,000-kw addn. (sixth unit) to High Bridge Generating PLANT, ST. PAUL, MINN., CD 7/12/56;
Babcock & Wilcox, Barberton, O., CA suppliers of heavy equipment, boiler; for sixth unit, High Bridge Generating Plant (St. Paul, Minn.);
General Electric Co., River Rd., Schenectady, N. Y., Ca turbo-generator for sixth unit, High Bridge Generating Plant (St. Paul, Minn.);
Ingersoll-Rand Co., 11 Broadway, New York, N. Y., CA condenser and auxiliaries for sixth unit, High Bridge Generating Plant (St. Paul, Minn.);
Pittsburgh Piping & Equipment Co., 158 49 St., Pittsburgh, Pa. CA high-pressure piping for sixth unit, High Bridge Generating Plant (St. Paul, Minn.).

Sheehy Constr. Co., 1255 Larpenteur Ave. W., St. Paul, Minn. CA **$280,000** general contract beef cooling bldg. at PACKING PLANT, SOUTH ST. PAUL, MINN. Armour & Co., South St. Paul, Minn. Johnson & Backstrom, 1200 Roanoke Bldg., Minneapolis, Minn., archts.

Elmer [illegible] **Co.**, 1105 Christi St., Devenport, Iowa, CA **$[illegible]5**. general contract constr. addn., alterations to JUNIOR HIGH SCHOOL, DAVENPORT, IOWA. Bd. Educ., **Davenport, Iowa.** Bids Aug. 7. CD 1/4/54.

Don L. Bron, 8607 Cambridge St., Kansas City, Mo. CA Est. **$344,755,** JUNIOR-SENIOR HIGH SCHOOL, KEYTESVILLE, MO. Bd. Educ., Keytesville, Mo.

The Kloster Co., 4607 Beck Ave., St. Louis 16, Mo., CA **$831,248**. general contract 1, 2, and 3 story, 77x338 ft. and 74x159 ft., Carr Lane SCHOOL, bounded by Jefferson Ave., Cole, Carr and 23 Sts., ST. LOUIS, MO. Bd. Educ., George H. Fletcher, comr. School Bldgs., 911 Locust St., St. Louis 1, Mo. Bids Aug. 23, awarded Sept. 5. CD 9/4, under LB.

Harry La Boube, 7404 Devonshire Ave., St. Louis 9, Mo., CA Est. **$149,300**. 1 story, 90x400 ft. FACTORY addn., 1000 Blow St., ST. LOUIS, MO. Re Pel Mar Co., Inc., and Marlo Coil Co., lessee, 6135 Manchester Ave., St. Louis, 10, Mo. H. Brussel, Arcade Bldg., St. Louis 1, Mo.

Murch-Jarvis Constr. Co., 718 Locust St., St. Louis 1, Mo., CA Est. **$100,000**. 1 story truck line TERMINAL WAREHOUSE, OFFICE, 55 West, East Grand Ave. ST. LOUIS, MO. W. C. Bernard, 2186 Railway Exchange Bldg., 611 Olive St., St. Louis 1, Mo.

Lewis & West, El Dorado, Kan., CA Est. **$200,000**. 2 story, bsmnt., 20,000 sq. ft., stone, glass, brick, concrete AUTOMOBILE SERVICE SHOPS, STORAGE PARTS and SHOWROOM and OFFICE SPACE, EL DORADO, KAN. Ronald Rice Chevrolet Co., El Dorado, Kan. CD 3/28, under LB.

M. K. Eby Constr. Co., 610 N. Main St., Wichita, Kan., LB **$168,990**. roof repairs and alterations to PLANT BUILDINGS, WICHITA, KAN. Boeing Airplane Co., Personnel Bldg., Wichita, Kan. CD 8/7/56.

M. Z. Collins Constr. Co., 1406 Colorado St., Austin, Tex. LB **$776,000,** J. E. Pearce JUNIOR-SENIOR HIGH SCHOOL, AUSTIN, TEX. Austin Independent School Dist., Austin, Tex. Bids Sept. 3. CD 6/20/56.

Ralph M. Parsons Co., 617 S. Olive St., Los Angeles, 14, Calif., design and construct CA **$900,000** SULPHUR RECOVERY PLANT addn., BAYTOWN, TEX. Stauffer Chemical Co., (Consolidated Chemical Div.), Baytown, Tex.

Austin Bldg. Co., 1000 Singleton St., Dallas, Tex., LB **$689,733** (Unit 3 only) Lon C. Hill ELECTRIC POWER PLANT incl. addn. of 175,000 kw. generating unit CALALLEN, TEX. Central Power & Light Co., 120 N. Chaparrel St., Corpus Christi, Tex. Bids Sept. 3. CD 8/20.

Gregory E. Good Constr. 10742 Lennox St., Dallas, Tex., Owner Builds. **$550,000,** 10 all masonry DWELLINGS, in Hockaday Square site, DALLAS, TEX. CD 8/23.

General Housing, 13715 Pyramid St., Dallas, Tex. Owner Builds. **$345,500** 21 DWELLINGS; **$369,700** 24 DWELLINGS in Valwood Park, FARMERS BRANCH, TEX. CD 8/29.

Holden Constr. Co., 1310 Electric Bldg., Fort Worth, Tex. CA **$530,627,** 2 story, masonry HIGH SCHOOL, FORT WORTH, TEX: Castleberry School Dist., c/o C. O. Strother, pres. Bd., 415 Hagg St., Fort Worth, Tex. Bids Aug. 30, awarded Sept. 4. CD 9/6, under LB.

▲ **Thos. F. Byrne,** Fort Worth National Bldg., Fort Worth, Tex., LB **$3,150,000** HOSPITAL addn., FORT WORTH, TEX. St. Joseph's Hospital, 1401 S. Main St., Fort Worth, Tex. Bids Sept. 5. CD 8/21.

▲ **Centex Constr. Co.**, 4606 Greenville St., Dallas, Tex. Owner Builds. **$355,000** 27 DWELLINGS; **$363,190,** 29 DWELLINGS; **$378,175,** 32 DWELLINGS in south side of GRAND PRAIRIE, TEX. Grand total $1,096,365. CD 9/3.

▲ **Embe Development Co.**, 1405 S. Post Oak, Houston, Tex. Owner Builds. **$377,375,** 35 DWELLINGS; **$360,000,** 30 DWELLINGS; **$350,500,** 28 DWELLINGS Crestmont Subdivision in South Houston, HOUSTON, TEX. Grand total $1,087,875. CD 6/28.

▲ **T. D. Howe Constr. Co.**, Box 19027, Houston, Tex. LB **$1,223,783,** REHABILITATION and RESEARCH BLDG. at Texas Medical Center Zone,, HOUSTON, TEX. Texas Institute for Rehabilitation & Research, c/o Wilson Morris, Crain & Anderson, archts., 3330 Graustark St., Houston, Tex. Bids Aug. 20. CD 8/6.

Paul H. Wolf Constr. Co., 3418 W. Alabama St., Houston, Tex. Owner Builds. **$350,000,** 14 DWELLINGS; **$345,000,** 23 DWELLINGS, in SE section of City off Westheimer and Piney Point Rds., HOUSTON, TEX. CD 8/26.

Pinehurst Corp., c/o 6332 Long Drive, Houston, Tex. Owner Builds. **$347,200,** 26 DWELLINGS; **$374,190,** 32 DWELLINGS, Crestmont Subdivision, HOUSTON, TEX. CD 6/28.

Mooney Aircraft, Inc., c/o E. Herbert Anderson, Jr., Kerrville, Tex., Owner Builds. **$100,000**. PLANT expansion, KERRVILLE, TEX. CD 9/9.

Texas Boat Mfg. Co., Inc., c/o Norman G. Roberts, 510 S. Hill St., Lewisville, Tex. Owner Builds. **$175,000** BOAT MFG. **PLANT, LEWISVILLE, TEX.** CD 5/3.

McClendon Constr. Co., Longview, Tex. LB approx. **$610,000** BANK-OFFICE, LONGVIEW, TEX. Longview National Bank, Longview, Tex. Bids Aug. 29. CD 8/12.

Kinder Homes, 747 W. Sunset Rd., San Antonio, Tex. Owner Builds. **$357,760,** 30 DWELLINGS, in Alamo Heights Gardens, SAN ANTONIO, TEX. CD 8/26.

Brown-Schepferman, 240 Washington St., Denver, Colo. CA **$416,980,** general contract 2 story, bsmnt., 64x237 ft. Machebouff HIGH SCHOOL, DENVER, COLO. Parish of Blessed Sacrament, 4930 Montwait Blvd., Denver, Colo. Bids Aug. 28, awarded Sept. 4. CD 8/29.

† **C-K Constr. Corp.**, 2647 W. Lawrence St., Chicago, Ill. LB **$473,400** (9 bidders) Proj. BU 603-414, Huerfano, DORMITORY FACILITIES, HUEREANO, N. M. Bureau Indian Affairs, C St. between 18 and 19 Sts. N. W., Wash. 25, D. C.

† **U. S. Eng.**, P. O. Box 1538, Albuquerque, **N. M.**, cancelled bids to have been opened Aug. 28, DART OPERATIONS BLDG., White Sands Proving Ground, ENG-29-005-58-19, LAS CRUCES, N. M. CD 8/14.

▲† **C. H. Leavell & Dan R. Ponder, Inc.**, 1900 Wyoming St., El Paso, Tex. LB **$6,798,400** basic only 8-units Capehart HOUSING, Wingate Ordnance Depot, ENG-29-005-58-5, WINGATE, N. M. U. S. Eng., P. O. Box 1538, Albuquerque, N. M. Bids July 30. CD 6/27.

FAR WEST

HEAVY CONSTRUCTION—BA

▲ **CALIFORNIA**—BA 10/2—State Div. Hys., 1120 N. St., Sacramento,
Inyo Co.—grading, paving 3.9 mi. county hy. on Whitney Portal Rd. between Hunter's Flat and near National Forest boundary, FAS County Rte 1242, IX Inyo-1242, $340,000.
Lassen Co.—clearing, grubbing 10.3 mi. hy. right of way on Feather Lake Hy., FAS County Rte. 1232, about 20 mi. northwest of Susanville II Los-1232, $75,000.
Navada Co.—grading 3 mi. 2 lane county hy. and constr. drainage facilities on Tyler-Foote Rd. between Kennedy Ranch and 0.7 mi. west of North Columbia III-Nev. 765 **$180,000.**
Placer Co.—grading, surf. roads parking areas and ramps and constr. drainage and misc. facilities in Folsom Lake State Park at Beal's Point and Granite Bay, III Pla-State Park, $594,000.
San Benito Co.—grading 3.9 mi. roadbed and constr. drainage structures on Panoche Rd., FAS County Rte 1193 between Paicines and Cottonwood Rd. Jct. V-SDt-1193, **$110,000. CD 10/25.**

CALIFORNIA—BA 10/3—State Div. Hys., 120 S. Spring St., Los Angeles,
Los Angeles Co.—346 ft. rein.-con. pedestrian overcrossing on Rosemead Blvd. at Balfour St., Crossway Dr., **VII-LA-168-B. $75,000. CD 10/25.**

CALIFORNIA—BA 10/3—State Div. Hys., 120 S. Spring St., Los Angeles,
Orange Co.—installing traffic signal sys. and hy. lighting in San Clemente on El Camino Real at Avenida Victoria-Avenida El Monte, Avenida Del Mar, Avenida Palizado and Avenida Mariposa,, in Laguna Beach on Coast Blvd. at Cliff Dr.-Viejo St. and Clif Dr.-Beverly St. VII-Ora-2, 60 SCle, Ign B. CD 10/25.

† **California**—BA 10/10—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Sch., Item 1, control sys. consisting of a control cabinet, one indicator cabinet, one oil tank, piping brackets and appurtenant control parts for outlet gates, Item 2, equipment consisting gasoline engine, flexible coupling and base for outlet works, Vaquero Dam, Santa Maria Proj., DS 4964. CD **4/14/44.**

† **Idaho**—BA 10/10—U. S. Eng., City-County Airport, Walla Walla, Wash., repair bank protection at Blackfoot area, Snake River, CIVENG-45-164-58-14. Myron E. Page, Jr., c/o owner, engr. CD 2/10/43.

† **Washington**—BA 10/31—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo., furnishing three motor driven horizontal, centrifugal type, 37 cfs, 275 ft. head pumping units, and two motor-driven, horizontal, centrifugal type, 17.5 cfs, 119 ft. head pumping units for Radar Pumping Plant, Columbia Basin Project, Inv. No. DS-4967; adv. ENR 9/19.

BUILDINGS—BA

Calif., Emeryville—PLANT—Shell Development Co., 4560 Horton St., soon lets contract, plant. $95,000.

▲ **Calif., Oxnard**—BOWLING ALLEY, etc.—Henry Horn, 499 S. Beverly Dr., Beverly Hills, soon lets contract brick masonry 44,000 sq. ft. bowling alley and 25,000 sq. ft. skating rink. $1,500,000. Anthony & Langford, 704 W. Whittier Blvd., Whittier, Calif., archts.

HEAVY CONSTRUCTION—LB & CA

† **Power City Electric Co.**, N 92 Howard St., Spokane, Wash., CA **$74,179** (10 bidders), 5.6 mi. access roads and constr. McNary-Richland 115-kv line No. 1, McNary-Pasco Mile 19-Highlands section, WASHINGTON. Bonneville Power Admin., 1001 N.E. Lloyd Blvd., Portland, Ore. Awarded Aug. 26.

▲† **C. M. Halverson, Inc.**, 10626 S.W. Pacific Hy., Portland, Ore., CA **$1,164,186,** 440 ft. welded steel plate girder bridge with 295 ft. approach spans, over Nisqually River between Longmire and Paradise Inn in Mt. Rainier National Park, WASHINGTON. Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland, Ore. Bids Aug. 16. CD 8/22, under LB.

† **Lewis Constr. Co., Inc.**, Kennewick, Wash., CA **$74,198,** constr. earthwork and structures for DE 79 drain sys., Block 46, Columbia Basin Proj., Spec. 117C-450, WASHINGTON. Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Aug. 13, awarded Aug. 30. CD 7/18.

Mid-Mountain Contractors, 1310 Airport Way, Seattle, Wash., CA Est. **$350,000,** 11 mi. 6 and 8 in. supply line from Dieringer to Kent, King and Pierce Counties, WASHINGTON, Wash. Natural Gas Co., Gasco Bldg., 4th and Pike Sts., Seattle 1, Wash., CD 10/24/55;
Engineers Limited Pipeline Co., 2021 Minor Ave. N., Seattle 1, Wash., CA Est. **$314,000,** 4.5 mi. supply line from Fircrest to Ruston, to supply Tacoma smelter, plus 10,000 ft. distr. mains, Pierce Co. (Washington);
Wash. Natural Gas Co., Gasco Bldg., 4th and Pike Sts., Seattle 1, Wash., Day Labor, **$100,000,** supply main, distr. mains and regulator station, Marysville (Washington).

Riverside Constr. Co., Box 3853, Portland, Ore., LB **$81,846 (3 bidders), sewage pumping station and** 9,795 lin. ft. 6- to 10-in. sewer pipe, CAMAS, WASH. City, City Hall, Camas, Wash. CD 8/20.

F. Coluccio Constr. Co., 7708 Seward Park Ave., Seattle, Wash., LB **$173,905** (3 bidders) 18,000 ft. 6- to 15-in. sewers, SEATTLE, WASH. Valu Vaue Sewer Dist., 3251 S. 137 St., Seattle, Wash. Bids Sept. 3. CD 8/29.

(Continued on page 130)

Wide bowl of L-W Rear-Dump provides easy target for shovel operator . . . speeds shovel-loading and reduces spillage. Low rear-entry bowl lets shovel swing in and out at low dumping heights.

Michigan gravel firm BOOSTS PRODUCTION by opening shorter haul route

. . . L-W Rear-Dump licks sand, uphill haul

To step up production of sand and gravel needed for paving Michigan Route 27, Nashville Gravel Co., Nashville, Michigan, opened a more direct pit-to-plant route. The new half-mile haul-road was extremely sandy, with difficult adverse grades. It was considerably shorter, however, than the "long way around" which Nashville's LeTourneau-Westinghouse D Tournapull® Rear-Dump and 3 other haulers on the job had been using.

Hauling weighed loads of up to 15 tons, the 138 hp "D" demonstrated its rugged muscle-power and traction. It climbed a steep grade out of the pit with little difficulty, where competitive units had to wait until a bulldozer cut down the grade. Machine hauled steadily over the rough haul-road, without trouble. It made several trips — pioneering and compacting the trail so that Nashville's other units could risk using the new shorter route.

Produced 1500 tons tested gravel daily

To supply two double-drum pavers on Route 27, 1500 tons of tested gravel had to be produced per day from the pit. The Rear-Dump regularly hauled heaped loads 2115′ over sandy, hilly roads . . . deposited loads in hopper . . . then returned the same distance, averaging the 4230′ cycle in 7.61 minutes.

"Gets where other units won't go"

Supt. Dale Smith had this to say about the D 'Pull* Rear-Dump: "We like its maneuverability. It will get in and out of places where our other units won't go. It's safer, because the operator has good visibility and positive dumping control."

Owner F. G. Cheney said, "We like the Tournapull because it delivers more material on this longer haul. The flotation of the big tires is good in soft conditions."

It will pay you to investigate LeTourneau-Westinghouse Tournapull Rear-Dumps. They're top production haulers that work profitably everywhere, and especially in rugged terrain. Available in 3 sizes to fit your particular jobs: 11, 22, and 35-ton models. Write for full details.

D 'Pull Rear-Dump spills 15-ton load of sand and gravel into hopper at washing plant near Nashville, Mich. Here gravel is washed, processed, and tested for Michigan State specifications — to be used in manufacturing concrete to pave Route 27.

*Trademark DR-1299-Q-1

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

(Continued from page 128)

C. Madsen Co., 3101 S. Lawrence St., Tacoma, Wash., LB **$82,640**, street work at Salishan housing project, TACOMA, WASH., Tacoma Housing Auth., 132 Longview St., Tacoma, Wash.

Milone & Tucci, 3215 S. M St., Tacoma, Wash., LB **$99,500** constr. natural gas distr. sys. and alter sewer and water sys. at Salishan housing project, TACOMA, WASH. Tacoma Housing Auth., 132 Longview St., Tacoma, Wash.

† **OREGON**—Bureau P. Rds., Morgan Bldg., Portland, Ore.,

A. L. Harding, Inc., Stayton, Ore., LB **$228,394** (14 bidders) 6.687 mi. Steve Fork Rd., Rouge River National Forest, Jackson and Josephine Counties. Bids Sept. 4.

† **OREGON**—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland, Ore.,
rejected bids Aug. 26, stockpiling near Smith River Rd., Douglass Co. New bids Sept. 10.

OREGON—State Hy. Comn., Hy. Bldg., Salem, Bids opened 8/30,
Ore.—**Pacific Concrete Co.**, 11840 N. E. Euegne St., Portland, Ore., LB **$110,744** (7 bidders), two grade separations, Old Oregon Trail Hy., FAP I-62 (11), Umatilla and Union Counties;
Ore.—**Hamilton & Thomas**, Box 726, Eugene, Ore., LB **$95,336** (11 bidders), Bear Creek and Rock Creek Bridges, FAP S-352-(1) & S-353(1), Clackamas Co. CD 8/22.

OREGON—State Hy. Comn., Hy. Bldg., Salem, Bids opened 8/30,
Ore.—**K. C. Dack Constr. Co.**, Pendleton, Ore., LB **$119,200** (11 bidders), grading, topping 9.99 mi. Ukiah-Hilgard Hy. FAP S-57(5), Umatilla Co.;
Ore.—**F. H. McEwen**, 1673 Villard St., Eugene, Ore., LB **$154,957** (8 bidders), grading 2.01 mi. oiling 2.31 mi. Springfield-Creswell Hy. FAP S-358(2), Lane Co.;
Ore.—**Rex C. Avers Constr. Co and Silver Falls Trucking & Constr. Co.**, 7305 N.E. 29th Ave., Portland, Ore., LB **$93,636** (4 bidders), grading, oiling 4 county roads, FAP S-357(1), S-354(1), S-355(1) & S-356(1), Hood River Co. CD 8/22.

† **OREGON**—U. S. Forest Service, 729 N.E. Oregon St., Portland,
Linn-Lane Constr. Co., Sweet Home, Ore., LB **$194,242** (6 bidders) 1.39 mi. Memaloose Rd., Mt. Hood National Forest, Clackamas Co.

Salem Sand & Gravel Co., 1405 N. Front St., Salem, Ore., LB **$97,240** (3 bidders) relocating 15,000 lin. ft. Oregons City's water line, Clackamas Co., OREGON. Portland General Electric Co., 670 S.W. Broadway, Portland, Ore. Bids Aug. 27. CD 8/15.

Gunderson Bros., 4700 N.W. Front Ave., Portland, Ore., LB **$109,300** (5 bidders) 3 m.g. steel water reservoir, OREGON, Rockwood Water Dist., 1207 Portland Trust Bldg., Portland, Ore. Bids Aug. 26. CD 8/15.

† **Russell M. Espedal**, 5906 N. Greeley St., Portland, Ore., LB **$51,579** (5 bidders) stone revetment and drift barrier, Murphys Bar, Marion Co., CIVENG-35-026-58-21, OREGON. U. S. Eng., Pittock Block, Portland, Ore. Bids Aug. 28. CD 8/19.

W. H. Conrad, Medford, Ore., LB **$82,141** (9 bidders) 5,800 lin. ft. 30 and 42 in. interceptor storm sewers, MEDFORD, ORE. City, City Hall, Medford, Ore. Bids Aug. 26. CD 8/13.

CALIFORNIA—State Div. Hys., 1120 N St., Sacramento,
Tum Hull, 930 Carson St., Eureka, Calif., LB **$80,496** (8 bidders) constr. 2 rein.-con. slab bridges and bridge approaches, roadways graded near Rockport at South Fork of Cottoneva Creek and at Cottoneva Creek, I Men-56-G.H., Mendocino Co. CD 8/8.

Kimball Constr. Co., Box 772, Redding, Calif., LB **$129,809** (5 bidders) power distr. sys. (primary and secondary power distr. bys.) CENTRAL VALLEY, CALIF. Shasta Dam Area Pub. Utility Dist., c/o Clerk, Bd. Directors, 4201 Front St., Central Valley, Calif. Robert Welty, Box 282, Port of the Dalles Dock, The Dalles, Ore., engr. CD 9/4/53, under Earthwork, etc., Calif., Redding.

E. L. Yeager, P. O. Box 87, Riverside, Calif., LB **$156,658** (7 bidders) "C" St. Underpass, drainage utilities, excavation, landscaping, etc., COLTON, CALIF. Bids Aug. 20. CD 7/26.

Kropfli & Burrous, 79 Ximeno Ave., Long Beach, Calif., LB **$139,390** (5 bidders) ticket booth and utility facilities under Blair Field Grandstand, Spec. R-2750, LONG BEACH, CALIF. City Manager, City Hall, Long Beach, Calif. Bids Aug. 28.

Harrison Bros., 1953 W. 148th St., Gardena, Calif., CA **$111,819** (4 bidders) imprv. 135th St., Prairie Ave. to Crenshaw Blvd., CI 1767-M Lawndale, LOS ANGELES, CALIF. Bd. Supervs., Los Angeles Co., 501 Hall of Records, Los Angeles, Calif. Bids Aug. 23, awarded Aug. 27. CD 7/31.

† **Albert Eng. Co., Inc.**, 371 4th St., San Francisco, Calif., LB **$117,500** (11 bidders) organizational hangar deluge sys., ENG-04-353-58-7, OXNARD, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 27. CD 8/9.

Attwood & Pursel, 2700 New York Dr., Pasadena, Calif., CA **$137,936** imprv. 0.8 mi. Orange Grove Ave., Marengo Ave. to Lake St., PASADENA, CALIF. City, City Hall, Pasadena, Calif. Bids Aug. 21. CD 3/14/56.

E. L. Yeager, Lowe & Watson, Bert Altfish, P. O. Box 87, Riverside, Calif., CA **$131,173** (joint venture) North San Bernardino Flood Control Proj., Little Mt. Basin. Bid No. 1027, SAN BERNARDINO, CALIF. San Bernardino Co. Flood Control Dist., County Health Bldg., San Bernardino, Calif. Bids Aug. 22, awarded Aug. 26. CD 12/15/44.

W. V. Hutchison, 5835 Mission Gorge Rd., San Diego, Calif., LB **$104,499** sanitary sewers in Camino Del Rio West of Cabrillo Freeway and Cabrillo Freeway south of Camino Del Rio, SAN DIEGO, CALIF. City, Civic Center, 1600 Pacific Hy., San Diego, Calif. Bids Aug. 28. CD 11/7/52.

BUILDINGS—LB & CA

▲† **Gresham Constr. Co., & Alken Constr. Co.**, P. O. Box 300, Santa Clara, Calif., LB **$3,306,483** (9 bidders) armed services HOUSING at Kingsley Field, IFB 58-1, KLAMATH FALLS, ORE. Purch & Contg. Officer, U.S.A.F., Kingsley Field, Calif. CD 2/29/56.

▲ **Viesko & Post**, Box 69, Salem, Ore., LB **$2,684,112** (7 bidders) general contract, Intermediate Penal INSTITUTION, PORTLAND, ORE. Oregon Bd. Control, Capitol, Salem, Ore. Bids Aug. 27. CD 8/6.

Smith-Campbell Co., 6510 Cherry Ave., Long Beach 5, Calif., CA **$475,173** 16 classroom Robert M. Pyles SCHOOL, Dale and Cerritos Aves., Stanton, ANAHEIM, CALIF. Magnolia School Dist., 9751 Dale Ave., Anaheim, Calif. Bids Aug. 16. CD 7/18.

Security Builders, 156 N. Canon Dr., Beverly Hills, Calif., CA **$600,000**. 4 story, 44,000 sq. ft., brick OFFICE, 462 N. Linden Blvd., BEVERLY HILLS, CALIF. Santa Monica Linden Co., 404 S. Roxbury Dr., Beverly Hills, Calif.

▲ **Barrett Constr. Co.**, 1800 Evans Ave., San Francisco, Calif., CA **$1,700,000** HOSPITAL addn., CONCORD, CALIF. Concord Hospital Dist., c/o general contractor. Confer & Willis, 366-40th St., Oakland, Calif., archts. Constr. to start Oct. 1, 1958. ENR 1/6/48.

Everett S. M. Brunzell Constr. Co., 3945 Higuera St., Culver City, Calif., CA **$769,975**, 51,000 sq. ft. tiltup concrete steel, brick and plaster exterior addn. to Earl Warren HIGH SCHOOL, DOWNEY, CALIF. Downey Union High School Dist., 8521 E. Firestone Blvd., Downey, Calif. Bids Aug. 27. CD 8/19.

▲† **Sun Gold, Inc., & Inland Empire Builders, Inc.**, P.O. Box 8, Riverside, Calif., LB **$10,656,000** (12 bidders) wood frame, stucco, 900 Family HOUSING UNITS, concrete fdns., ENG-58-4, FORT ORD, CALIF. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids Sept. 5. CD 8/8.

Wadley Constr. Corp., 2205 N. Edwards St., El Monte, Calif., CA **$437,000** (9 bidders) 1 story, frame stucco, TEMPLE SCHOOL, LA PUENTE, CALIF. Hudson School Dist., 561 N. 5th St., La Puente, Calif. Bids Aug. 22. CD 8/12.

▲ **Harvey A. Nichols Co.**, 926 East Lawson Ave., Los Angeles, Calif., CA **$1,574,300** general contract 2 story 24,000 sq. ft. 1 story lecture wing SCIENCE BLDG. addn., LONG BEACH, CALIF. State Div. Architecture, 1100 S. Grand Ave., Los Angeles, Calif. Bids Aug. 28, CD 9/3, undre LB.

Burch Constr. Co., 5126 Vineland Ave., North Hollywood, Calif., CA **$432,600**, Osceola St. SCHOOL, San Fernando, LOS ANGELES, CALIF. Los Angeles Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Victor Gruen, 135 S. Doheany Dr., Beverly Hills, Calif., archt. Bids Aug. 23. CD 9/13/56.

▲ **Crown Constr. Co.**, 5059 W. Pico Blvd., Los Angeles 19, Calif., CA **$2,129,500**, 133,000 sq. ft. frame, stucco Henry Clay JUNIOR HIGH SCHOOL, LOS ANGELES, CALIF. Los Angeles Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids Aug. 16, awarded Aug. 28. CD 8/27, under LB.

Diversified Bldrs., P.O. Box 390, Montebello, Calif., CA **$140,000**, 47,038 sq. ft. TRAILER PLANT and WAREHOUSE, 9250 E. Washburn St., Downey, LOS ANGELES, CALIF. Downey Land Co., Imperial and Bellflower Blvds., Downey, Calif.

Steed Bros. Constr. Co., P.O. Box 350 Alhambra, Calif., CA **$459,400** (8 bidders) est. $450,000, brick, concrete Toland Way SCHOOL addns., LOS ANGELES, CALIF. Los Angeles Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Parker & Parker, 408 S. Spring St., Los Angeles, Calif., archts. Bids Aug. 22, awarded Aug. 23. CD 10/23.

Fratessa-Nicholson, P.O. Box 430, Monterey, Calif., CA **$624,131** 35,000 sq. ft. frame, stucco General Joseph Stilwell ELEMENTARY SCHOOL, Fort Ord Reservation, MONTEREY, CALIF. Monterey City Elementary School Dist., c/o Supt., Box 1031, Monterey, Calif. Bids Aug. 14, awarded Aug. 30. CD 8/21, under LB.

N. E. Berry Constr. Co., 660 W "G" St., Ontario, Calif., CA **$749,949** 30,000 sq. ft. each, 18 post and beam with frame, stucco and brick veneer walls ELEMENTARY SCHOOLS Nos. 16 and 18, ONTARIO, CALIF. Ontario School Dist., 950 W. "D" St., Ontario, Calif. Bids Aug. 22, awarded Aug. 27. CD 8/2.

Barringer & Botke, 1433 E. Main St., Santa Paula, Calif., CA **$519,700**, 32,000 sq. ft. CLASSROOM addns. to Primary School No. 2, RIO, CALIF. Rio Elementary School Dist., P.O. Box 1032, Oxnard, Calif. Bids July 16. CD 7/26, under LB.

▲ **Cotton Constr. Co.**, 1735 McKinley St., National City, Calif., CA **$1,366,321** (6 bidders) 105,023 sq. ft. frame, stucco D. C. Collier JUNIOR HIGH SCHOOL, SAN DIEGO, CALIF. San Diego Unified School Dist., 4100 Norman St., San Diego, Calif. Bids Aug. 20. CD 8/27, under LB.

CANADA

HEAVY CONSTRUCTION—BA

Ont., **Toronto**—BA 9/24—Ontario Water Resources Comn., East Block, Parliament Bldgs., addnl. trunk sewers and force mains, Stage I, Lakeview Area Sewerage Scheme, incl. **(a)** 5,600 lin. ft. 21 in. diam. pipe **(b)** 5,850 lin. ft. 10 in. diam. pipe. Over $100,000. Gore & Storrie Ltd., 1130 Bay St., engrs.

HEAVY CONSTRUCTION—LB & CA

Malvern Constr. Co., Ltd., 490 Dawes Rd., Toronto, Ont., CA **$190,800**. storm and sanitary sewers, water mains, etc. in north section of Golfdale Gardens, Scarborough, TORONTO, ONT. Berta Developments, Ltd., 765 Mount Pleasant Rd., Toronto, Ont. Proctor & Redfern, 2625 Eglinton Ave. E., Toronto, Ont., engrs. Awarded Aug. 29.

Finley W. McLachlan Ltd., 195 Fairbank Ave., Toronto, Ont., CA **$626,098** (12 bidders) 57 x 90 ft., structural steel, brick Eglinton Pumping Station, TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids Aug. 6. Awarded Sept. 2. CD 7/17.

▲ **Miron Constr. Ltd., Walsh-Canadian Constr. Co. Ltd., and J. D. Stirling Co. Ltd.**, c/o 940 Cote de Liesse Rd., Montreal, Que., CA **$7,694,000**: Sect. IV, elevated expressway Metropolitan Blvd. from point west of St. Lawrence Blvd. to eastern limits of MONTREAL, QUE. City, City Hall, Montreal, Que. Bids Aug. 28. CD 9/4, under LB.

BUILDINGS—LB & CA

Thomas Constr. Co. Ltd., 40 Kerr St., Galt, Ont., CA Est. **$250,000**. 27,000 sq. ft. PLANT exten. GALT, ONT. Canadian General Tower Ltd., 52 Middleton Ave., Galt, Ont. Babcock Scrivener, Ltd., 119 Isabella St., Toronto, Ont., engrs. CD 6/20/56.

Eastern Constr. Co., 416 Mount Pleasant Rd., Toronto, Ont., CA about **$858,000** (9 bidders) 2 story, brick, block, concrete JUNIOR HIGH SCHOOL, Gorman Rd., TORONTO, ONT. North York Bd. Educ. 7 Kenneth St., Willowdale, Ont. Bids Aug. 22, awarded Sept. 2. CD 8/6.

ALASKA

HEAVY CONSTRUCTION—LB & CA

† **ALASKA**—Bureau P. Rds., Dpt. Commerce, Federal Bldg., Juneau,
Sitka Pulp Mill Builders, 414 Pontius St., Seattle, Wash., LB **$328,136**, clearing, grubbing, grading, draining, Blue Lake Forest Development Rd. near Sitka, Proj. 211-B, Bids Sept. 3. CD 8/23.

† **Macri Constr. Co.**, Box 1079, Anchorage, Alaska, LB **$162,461**, 2.7 mi. 6- to 15-in. trunk and lateral sewers, Proj. 50-A-291, ANCHORAGE, ALASKA. Alaska P. Wks., Dpt. Interior, Box 118, Juneau, Alaska. Bids Sept. 4. CD 8/12.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

† **Ciagar**, Madrid, Spain, LB **$228,217** (8 bidders) FM general purpose and air craft field maintenance shop, TOR 64, Spanish only, TORREJON, SPAIN, Dpt. Navy, Bureau Yards & Docks, 18 St. and Pa. Ave. N. W., Wash., D. C., U. S. A. Bids Aug. 7.

PROPOSED PROJECTS

WATER SUPPLY

Mass., **Wakefield**—Town, P. Wks. Dpt., Lafayette Bldg., Wakefield, water main extens. **$300,000**. Constr. 1957. Camp, Dresser & McKee, 6 Beacon St., Boston, consult. engrs. CD 4/7/55.

O., **Barberton**—City, City Hall, water pumping station at confluence of Pidgeon and Wolfe Creek northwest of here. **$350,000**. Burgess & Nipple, 2015 W. Fifth St., Columbus, consult. engrs.

▲ Pa., **Sharon**—WW—Shenango Valley Water Co., Sharon, plant expansion next year to incl. increasing rated capacity from 8 to 14 m. g. per day by bldg. chemical bldg., addnl. settling basins, new finished water storage basin, addnl. filters and pumping equipment, (over 1,000,000) extension of water lines and imprv. sys. (over 800,000) **$2,000,000**. Malcolm Pirnie Engineers, 25 W. 43rd St., New York, N. Y., consult engrs.

Tex., **Houston**—City, City Hall water lines, facilities to serve packing plant area 5½ mi. north of City. **$400,000**.

▲ Tex., **Midland**—City, City Hall, 27 mi. 30 in. water line from Well Field to city limits, **$1,300,000**; Well Field, 25 mi. north of Midland off Hy. 349 **$200,000**; Well Field pumping station **$500,000**. Freese & Nichols, 407 Danciger Bldg., Fort Worth, consult. engrs. CD 7/24/52.

Ont., **Stoney Point**—Tilbury North Twp., H. Markham, clk.-treas., R.R. No. 1, Stoney Point, WW sys., water mains, etc., Tilbury. **$188,736**.

SEWERS, WASTE DISPOSAL

Calif., **Calistoga**—City, c/o Mayor, City Hall, defeated bonds Aug. 20, sewage treatment plant addns., appurtenances **$250,000**. CD 7/22.

▲ Colo., **Pueblo**—City, City Hall, **$1,100,000** bond election Nov. 5, sewage treatment plant. Simon F. Elliott, 111 E. 5 St., consult. engr-archt. CD 9/16/55.

(Continued on page 132)

Broad, low-pressure tires "float" Tournapull ("C" size shown) over soft going. Deep lugs give ample traction. With self-cleaning tread design, natural running action forces mud and dirt toward edges of tire. This, plus constant tire flexing, keeps tread clean for efficient traction under all conditions.

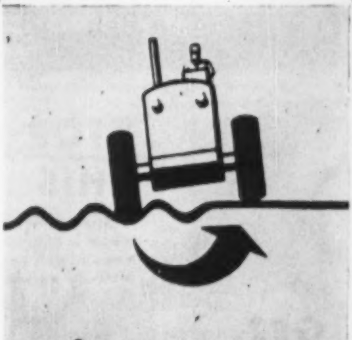
How to beat bad weather ...tough job conditions

It's no accident that LeTourneau - Westinghouse Tournapull® scrapers haul more dirt — lose less time because of bad footing and other adverse working conditions — than any comparable rubber-tired scraper combination. Sand ... soft cuts and fills ... even wet, muddy going fails to bog-down Tournapull scraper combinations. Here's why:

POWER-TRANSFER DIFFERENTIAL

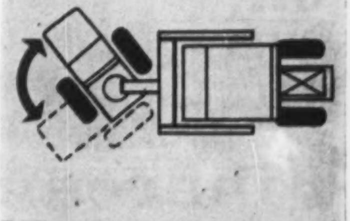
Major reason for Tournapull's success in moving impressive yardages in all working conditions is its patented, automatic, power-transfer differential. It maintains effective pulling-power on both drive-wheels — regardless of footing. When one wheel begins to spin, differential automatically transfers up to 4 times its tractive effort to drive wheel on firmer footing. Neither wheel will spin independently until the 4-to-1 ratio is exceeded.

Exclusive L-W differential works *continuously* — on turns, through mud and slippery footing, over rough, uneven ground. This gives you better traction throughout any haul cycle . . . for faster, easier, more profitable dirtmoving.



ELECTRIC KINGPIN POWER-STEER

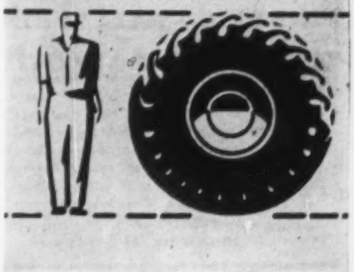
Where footing is very bad, positive electric kingpin power-steer adds to Tournapull's tractive power. Operator just flicks dashboard steering switch left, right, left, right. This pivots prime-mover from side-to-side . . . "walks" drive-wheels onto solid footing. Kingpin steer also permits operator to make continuous 180° turns in space less than unit's length . . . permits working in restricted areas.



BIG, LOW-PRESSURE TIRES

Big, single, low-pressure tires give *extra-flotation* to carry Tournapulls through soft going. Tire "floats" . . . stays on top of the ground instead of digging in.

In addition, tires provide firm, *positive traction*. Lug height on tire is great enough, and the distance between cleats wide enough, to permit a big bite. Operation at low-pressures permits more of the tread to grip the ground in soft sand or mud. Tournapull tires get a good firm grip, but do not dig in.



Get complete facts

For more work days in "shut-down" weather, it will pay you to investigate the popular easy-loading 27-yd. B Fullpak*, 18-yd. C Fullpak, or 9-yd. "D" handyman. Call or write for complete details and owner-verified production figures. No obligation.

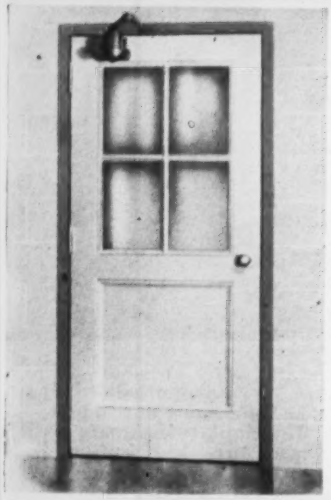
*Trademark P-1464-DC-1

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

RICHMOND "MD" HOLLOW METAL DOORS



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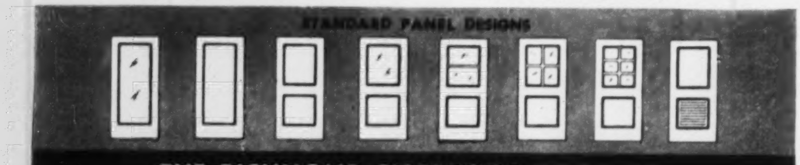

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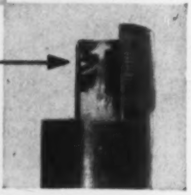

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(Continued from page 130)

Kan., Riverton—City, City Hall, sewerage imprv. program incl. 23,585 lin. ft. 6- to 10-in. sewer lines, 69 manholes, 2 lift stations and Plan A sewage treatment facilities involving waste stabilization basin **$125,925**; or Plan B, separate sludge digestion method, **$156,355**. Matthews & Hillman, 615 S. Glenstone St., Springfield, Mo., consult. engrs.

▲ **N. J., Hanover**—Hanover Twp., Town Hall, Whippany, sewerage facilities, incl. lateral and interceptor sewers and treatment plant. **$2,060,000**. Elson T. Killam, 529 Millburn Ave., Short Hills, engr. CD 8/7.

N. Y., **Busti**—Town, Town Hall, sanitary sewers and treatment plant, **$342,000**. State Aid Planning Funds allotted.

N. Y., **North Harmony**—Town, Town Hall, sanitary sewers in Loomis Point and Ashville Sections. **$301,000**.

▲ **Pa., Bradford**—Bradford Sewage Auth., City Hall, Bradford, sewage disposal sys. **$2,000,000**. Under state order to be in operation by 1959. Gannett, Fleming, Coddry & Carpenter, 600 N. 2 St., Harrisburg, consult. engrs. CD 4/18/46.

Tex., Fort Worth—City, City Hall, storm drainage in Wedgewood addn. **$150,000**. Carter & Burgess, 1300 Macon St., consult. engrs.

Tex., Houston—City, City Hall, sanitary sewers, incl. treatment plant and disposal packing plant waste to serve packing plant area 5½ mi. north of here. **$600,000**. CD 5/24/49.

Alaska, Sitka—City, City Hall, sewerage sys. **$100,000**. Work may start this fall.

STREETS AND ROADS

O., Sandusky—City, City Hall, imprv. Campbell St. from Perkins Ave. to N.Y.C. R.R., incl. installing storm and sanitary sewers, paving with c. conc. 36 ft. wide, **$170,939**. E. E. Harting, c/o owner, engr.

O., Van Wert—City, City Hall, widening Central Ave. from 66 to 80 ft. and exten. Central Ave. to Shannon and Main Sts. **$246,737**. Metropolitan Planners, Inc., Bd. of Trade Bldg., Indianapolis, Ind., consult. engr.

OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City, Zone 5,

Creek Co.—grading, draining 3 mi. Hy. 99 south of Oilton, **$90,000**.

grading, draining 4 mi. Hy. 99 north of Drumwright, **$110,000**. G. H. Bittle, state hy. engr.

Wash., Tacoma—City, City Hall, paving S. 46, 45, 41, 40 and 39 Sts., S. L, K and Fawcett, **$235,000**, Scheduled for next year. CD 11/29/54.

EARTHWORK, WATERWAYS

▲† **Alabama and Georgia**—U. S. Eng., 2301 Grant St., Mobile, Ala., Fort Gaines Lock and Dam. **$6,600,000**. (appropriated). CD 10/17/55.

▲† **Alabama**—U. S. Eng., 2301 Grant St., Mobile, Warrior Lock and Dam. **$2,000,000** appropriated. CD 9/13/56.

† **Arizona**—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., **$300,000** appropriated plus **$147,000** for planning Whitlow Ranch Reservoir, Queen Creek.

▲† **Arizona**—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., Painted Rock Reservoir, Gila River **$3,165,000 (appropriated)**.

† **Arkansas**—U. S. Eng., 300 Broadway, Little Rock. Units 5 and 6, Bull Shoals Reservoir. **$110,000**. CD 11/13/51.

▲† **Arkansas**—U. S. Eng., 300 Broadway, Little Rock, Dardanelle Lock and Dam, Arkansas River, **$1,400,000 (appropriated)**.

▲† **Arkansas**—U. S. Eng., P. O. Box 867, Little Rock, Greers Ferry Reservoir, Little Red River. **$1,700,000**. CD 8/30/56.

Conn., **Middletown**—Middletown Industrial Park, c/o Vincent S. Scamporini, atty., 148 College St., site preparation, Middletown Industrial Park, Newfield Section. **$100,000**.

Conn., **Waterbury**—City, City Hall, redeveloping flood-damaged public land areas, parks and stream clearance. **$383,920**. Henry C. Whitlock, city engr.

▲† **Delaware and Maryland**—U. S. Eng., P.O. Box 1715, Baltimore, Md., Summit Bridge on Inland Waterway, Delaware River to Chesapeake Bay. **$1,200,000** appropriated. CD 12/31/52.

▲† **Florida**—U. S. Eng., Box 4970, Jacksonville, dredging 30, 34 and 36 ft. channels in Tampa Bay. **$2,250,000 appropriated. CD 9/19/55.**

▲† **Florida**—U. S. Eng., P.O. Box 4970, Jacksonville, Central and Southern Florida Flood Control. **$5,500,000** appropriated. CD 8/13/56.

▲† **Florida**—U. S. Eng., P.O. Box 4970, Jacksonville, imprv. Intracoastal Waterway, Jacksonville to Miami. **$1,150,000** appropriated. CD 11/24/53.

† **Florida**—U. S. Eng., P.O. Box 4960, Jacksonville, imprv. St. Augustine Harbor, St. Johns Co. **$600,000** appropriated.

† **Florida**—U. S. Eng., Box 4970, Jacksonville, imprv. Horseshoe Cove. **$244,000** appropriated.

▲† **Kansas**—U. S. Eng., Federal Office Bldg., Kansas City, Mo., Tuttle Creek Dam on Big Blue River, **$10,000,000**, appropriated. CD 8/8/56.

▲† **Kansas**—U. S. Eng., Davidson Bldg., Kansas City, Kan., Strawn Reservoir on Grand River, $125,000 appropriated for planning. (Total **$38,000,000**). CD 7/15/53.

† **Kansas**—U. S. Eng., Box 61, Tulsa, Okla., Elk City (Table Mound) Reservoir, Elk River near Independance.

(Continued on page 133)

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(Continued from page 132)

$85,000 appropriated for planning only. **$22,000,000.** no appropriation.

▲† **Kansas**—U. S. Eng., Box 61, Tulsa, Okla., Toronto Reservoir, Verdigris River near Neodesha. **$4,700,000** appropriated. (**$15,000,000** no appropriation). CD 1/7/53.

▲† **Kentucky and Indiana**—U. S. Eng., 830 W. Broadway, Louisville, Ky., Lock and Dam 41, Markland Lock and Dam, Ohio River, **$4,000,000** appropriated. CD 12/27/55.

▲† **Kentucky**—U. S. Eng., P.O. Box 59, Louisville, Zone 1, dam and spillway, Buckhorn Reservoir, Middle Fork of Kentucky River, Perry Co. **$1,900,000** appropriated.

▲† **Kentucky**—U. S. Eng., 237 Fourth Ave., Huntington, W. Va., Greenup Locks and Dam, **$13,500,000** appropriated. CD 4/14/55.

Mass., **Worcester**—City, Worcester Housing Auth., 67 Tacoma St., excavation for drainage. **$160,000.** Camp, Dresser & McKee, 6 Beacon St., Boston, Mass., consult. engrs. Constr. in 1957.

▲† **Missouri and Arkansas**—U. S. Eng., P.O. Box 867, Little Rock, Ark., Table Rock Reservoir. **$17,000,000** appropriated. CD 7/16/54.

▲† **Montana**—U. S. Eng., Riverdale, N. D., second power plant at Fort Peck Dam. **$3,000,000.**

† **Nevada**—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., Pine Canyon Reservoir, Colorado River Basin, **$678,000** appropriated.

† **Nevada**—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., Mathews Canyon Reservoir, Colorado River Basin. **$463,000** appropriated.

▲† **New Mexico**—U. S. Eng., P. O. Box 1538, Albuquerque, Albiquiu Reservoir, Rio Chama, **$2,450,000** appropriated.

▲† **Ohio and West Virginia**—U. S. Eng., 925 New Federal Bldg., Pittsburgh 19, Pa., New Cumberland Locks and Dam, Ohio River, **$4,500,000** appropriated. CD 9/28.

▲† **Ohio and West Virginia**—U. S. Eng., 237 Fourth Ave., Huntington, W. Va., Dillon Reservoir, Licking River, **$4,000,000** appropriated. CD 9/13/56.

▲† **Oklahoma**—U. S. Eng., Box 61, Tulsa, Keystone Reservoir on Arkansas River, **$3,100,000** appropriated. CD 7/7/52.

▲† **Oklahoma**—U. S. Eng., Box 61, Tulsa, Okla., Oologah Reservoir, Verdigris River, Arkansas River Basin **$6,800,000** appropriated.

▲† **Oklahoma**—U. S. Eng., Box 61, Tulsa, Eufaula Reservoir on Canadian River. **$5,200,000** appropriated.

▲† **Oregon**—U. S. Eng., 628 Pittock Block, Portland, Ore., The Dalles Dam, Columbia River, **$19,000,000** appropriated. CD 9/17/56.

▲† **Pennsylvania and West Virginia**—U. S. Eng., 925 New Federal Bldg., Pittsburgh 19, Pa., Hildebrand Lock and Dam, Monogahela River. **$5,300,000** appropriated. CD 8/18/55.

▲† **Pennsylvania**—U. S. Eng., 2635 Abbottsford Ave., Phila., Prompton Reservoir, Lackawaxen River, near Honesdale. **$1,000,000** appropriated. CD 2/12.

▲ **Rhode Island**—U. S. Eng., 150 Causeway St., Boston, Mass., flood control Blackstone River, Woonsocket. **$1,750,000** appropriated.

† **South Dakota**—U. S. Eng., 1709 Jackson St., Omaha, Neb., Big Bend Reservoir, Missouri River. **$300,000** appropriated for planning. CD 10/4/55.

▲† **South Dakota**—U. S. Eng., 1709 Jackson St., Omaha, Neb., Oahe Reservoir, Missouri River **$27,000,000** appropriated.

† **Texas**—U. S. Eng., 1st and Douglas Sts., N. W., Wash., D. C., Cooper Dam and Reservoir and South Sulphur River. **$225,000** appropriated.

† **Vermont**—U. S. Eng., 150 Causeway St., Boston, Mass., modifying East Barre Reservoir, Winooski River. **$600,000** appropriated.

▲† **Vermont**—U. S. Eng., 150 Causeway St., Boston, Mass., Townshend Dam, West River. **$1,400,000.** CD 12/12.

▲† **Vermont**—U. S. Eng., 150 Causeway St., Boston, Mass., Ball Mountain Reservoir on West River. **$1,300,000** appropriated.

▲† **Vermont**—U. S. Eng., 150 Causeway St., Boston, Mass., North Springfield Reservoir, Connecticut River Basin. **$1,300,000** appropriated.

▲† **Vermont**—U. S. Eng., 150 Causeway St., Boston, Mass., North Hartland Reservoir, Connecticut River Basin. **$1,000,000** appropriated.

▲† **West Virginia**—U. S. Eng., 237 Fourth Ave., Huntington, Sutton Reservoir, on Elk River. **$8,000,000** appropriated. CD 8/18/55.

AIRPORTS

▲ **Colo., Denver**—RUNWAYS EXTENS.—City and Denver Co., City & County Bldg., Denver, North-south Runway exten. and East West Runway Exten., Stapleton Airfield. **$15,000,000.** Ken White, 1567 Marion St., consult. engr.-archt.

▲ **Mich., Grand Rapids**—AIRPORT—Bd. Supervs., Kent Co., Earl R. Knutson, bldg. Comr., county airport expansion **$2,346,000.** CD 1/19/56.

Tex., Alpine—RUNWAY, etc.—City, Jno. R. Whiteside, chmn. Airport Com. Phase No. 1, runway extensions and runway paving, **$90,000;** Phase No. 2, apron paving **$75,000;** Phase No. 3, field and area lighting, administration bldg. and grading and leveling for hangar spaces, **$85,000.**

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LATIN AMERICA

Mexico, Tampico—SHIPYARD—Astilleros de Mexico, Tampico, Tampa, Mexico, plans shipyard, **$500,000**.

PUBLIC BUILDINGS

Conn., New Milford—SCHOOL—Town, Town Hall, plans by William W. Sunderland, 31 West St., Danbury, 10 classrooms, new wing addn. to John Pettibone School, Pickett Dist. **$350,000**.

Conn., Northford—SCHOOL—Town of North Branford, plans by Davis, Cochrane & Miller, 29 Whitney Ave., New Haven, Northford Elementary School, Twin Lakes Rd. **$360,000**. CD 8/16.

Fla., Cocoa Beach—HOSPITAL—City, City Hall, plans by Joseph E. Carlisle, 47 E. Robinson Ave., Orlando, Beach Community Hospital. **$700,000**.

▲ **Fla., Miami**—OFFICE—Bd. Comrs. State Institutions, Terry C. Lee, secy., Tallahassee, plans by Walter Butler Co., 2505 Ponce de Leon Blvd., Coral Gables, state office bldg. **$4,000,000**. CD 2/15.

Fla., Sanford—HOUSING—Sanford Housing Auth., Sanford, plans by John A. Burton, IV, First St. and Mellonville Ave., housing, incl. 30 dwellings utilities, filling, grading, walks and drives, **$344,000**.

▲ **Fla., Tampa**—STATE OFFICE—Bd. Comrs. State Institutions, Terry C. Lee, secy., Tallahassee, plans by Frank McLane & Robert Wielage, 3631 Henderson Blvd., state office bldg. **$2,000,000**.

▲ **Fla., Tampa**—SCHOOLS—Hillsborough Co. Bd. P. Instruction, J. C. Farnell, supt., Court House, plans by Mark Hamilton, Stovall Prof. Bldg., John Quincy Adams Junior High School, North Blvd. and Bouganville, **$750,000**; plans by McLane & Ranon, 3631 Henderson Blvd., Sidney Lanier Elementary School, 4700 Montgomery Ave., **$500,000**.

▲ **Ill., Elgin**—SCHOOL—Bd. Educ., 353 E. Chicago St., plans by LeRoy Thompson, 355 Congdon St., 1 and 2 story, brick West Side Junior High School. **$1,500,000**. Site not selected.

Ill., St. Charles—SCHOOL—School Dist. 303, 705 W. Main St., plans by Nicol & Nicol, 23 E. Jackson Blvd., Chicago, 1 story, brick Junior High School, 9th and 11th Sts. **$393,000**.

Ind., Fort Wayne—SUB-STATION—Bd. P. Wks., City Hall, modernize Lafayette sub-station of City Light Utility, incl. cement block addn. and equipment, **$200,000**.

▲ **Ind., Indianapolis**—DORMITORY—Bd. Directors, Indiana University, Bloomington, student dormitory bdlg. at Indiana University Medical Center, **$1,000,000**.

Kan., Kansas City—COURTHOUSE—Wyandotte Co., City Hall, Kansas City, plans by R. E. Meyn, 1401 Fairfax Trafficway, Kansas City, Kans., courthouse addn. **$650,000**.

▲ **Mich., Grand Rapids**—CITY-COUNTY—Bd. Supervs. Kent Co., County Bldg., Grand Rapids, city-county bldg. **$4,410,000**.

Mich., Grand Rapids—HOSPITAL—Bd. Supervs. Kent Co. Earl R. Knutson, bldg. comr., Grand Rapids, bond election Oct. 1, psychiatric hospital. **$720,000**.

Mich., Grand Rapids—JUVENILE DETENTION HOME—Bd. Supervs. Kent Co. Earl R. Knutson, bldg. comr., bond election Oct. 1, Juvenile Detention Home. **$600,000**.

▲ **Mich., Grand Rapids**—MEDICAL CARE FACILITY—Bd. Supervs. Kent Co., Earl R. Knutson, bldg. comr., county medical care facility. **$4,100,000**.

Minn., Melrose—HOSPITAL—Melrose Community, Ted Welz, chn. Bldg. Com., voted $375,000 bonds Aug. 26, hospital. **$365,000**. M. M. Kehne, 1879 University Ave., St. Paul, archt. CD 6/4.

Mo., Desloge—SCHOOL—School Dist. of Desloge, Bd. Educ., Desloge, high school. **$900,000**.

▲ **Mo., Kansas City**—SCHOOL—Bd. Educ., Library Bldg., plans by Kivett & Myers & McCallum, 1016 Baltimore Bldg., Kansas City, Mo., Southwest Junior High School. **$1,395,000**. CD 5/4/56.

Neb., Fremont—NURSING HOME—Dodge Co., Fremont, nursing home addn. **$883,200**. CD 10/1/54.

▲ **Neb., Lincoln**—HOUSING—University of Nebraska, 12 and R Sts., married students housing. **$1,000,000**. CD 2/24/55.

▲ **N. J., Deans**—SCHOOL—Bd. Educ. Twp. of South Brunswick, George Rd., plans by Alexander Merchant Assocs., 1 Elm Row, New Brunswick, six-year high school. **$1,000,000-$1,500,000**.

▲ **N. J., Elizabeth**—HOSPITAL—Union Co., Court House, 250 bed addn. to John E. Runnells Hospital, Bonnie Burn Rd., Berkeley Heights, **$1,250,000**.

▲ **N. Y., Glen Cove**—SCHOOL—Bd. Educ., Glen Cove, bond election Oct. 22, high school, 24-acre tract on Dosoris Lane, **$2,800,000**. Frederick P. Wiedersum Assocs., 85 W. Hawthorne Ave., Valley Stream, archts. CD 3/4.

▲ **N. C., Charlotte**—COURT HOUSE—Mecklenberg Co. Comr., Court House, plans by Sloan & Wheatley, Chatham Bldg., county court house. **$2,000,000**.

▲ **Ore., Portland**—HOSPITAL—State Bd. Control, Capitol, Salem, plans by Stanton, Boles, Maguire & Church, Concord Bldg., first section state hospital. **$6,330,000**; second section hospital with facilities for aged **$7,000,000** (no appropriation). Bids in Spring on 1st section. CD 2/2/56.

▲ **Tex., Houston**—SCHOOL—East & Mount Houston Independent School Dist., R. W. Akridge, supt., Rte. 10, Box 600, plans by Matt E. Howard Jr. & Assocs., archts. consult. engrs., 2444 Times Blvd., 100,000 sq. ft., masonry Junior High School. **$1,250,000**. CD 12/8/55.

Wash., Seattle—SCHOOL—South Central School Dist. 406, 14208 42 Ave. S, plans by R. Burkhard, 2120 S. W. 152 St., Cascade Elementary School, 32 Ave. S. and S. 136 St. **$366,000**, Work to start early next year.

Wis., Cumberland—SCHOOL—Bd. Educ. plans by Dobberman & Helske, 304 Bd. of Trade Bldg., Superior, high school. **$800,000**.

Ont., Kitchener—FEDERAL—Dpt. P. Wks., Hunter Bldg., Ottawa, plans by Jenkins & Wright, 233 Queen St. W., federal bldg. addn., alterations, for Dpt. National Revenue, Taxation Div., **$500,000**. CD 2/5.

COMMERCIAL BUILDINGS

▲ **Ariz., Phoenix**—SHOPPING CENTER—William Barclay & Assocs., 812 N. 2nd St., plans by Elmo K. Lathrop, 3315 N. Central Ave., 320 acre commercial-industrial development, 300 room hotel, 18 hole golf course, 15 acre shopping district, 20 acre department store site, 600 residences. **$20,000,000**.

▲ **Ark., Little Rock**—SHOPPING CENTER—Rock Creek Development Co., Inc., c/o Ginocchio-Cromwell & Assocs., archts., 416 Center St., Village Shopping Center. **$3,750,000**.

▲ **Calif., Stockton**—HOSPITAL—Dameron Hospital, Lincoln and Magnolia Sts., plans by Rex Whittaker Allen, 111 New Montgomery St., San Francisco, Dameron Hospital addns., incl. operating room, x-ray, obstetrics room, etc. **$1,200,000**.

Colo., Denver — SHOPPING CENTER — Centennial Acre Shopping Center Co., c/o Huston Designs, archt.-consult. engr.-staff engr., 1524 Reed St., Lakewood, 80,000 sq. ft., shopping center, South Federal Blvd. and West Belleview Ave. **$344,000**.

Conn., Devon—SUPER MARKET—United Mortgage Co., c/o William D. Harlow, atty., 121 River St., Milford, plans by Eben B. Woolley, Red Root Lane, Milford, 1 story, mezzanine super market, Milford Point Rd. and Naugatuck Ave. **$400,000**.

Conn., Norwalk—HOUSES—Caddy Holding Co., Nursery St., 34 houses, Ponus Ave. **$422,000**.

Conn., Stratford—SHOPPING CENTER—Grand Union Co., 100 Broadway, East Paterson, N. J., shopping center, Barnum Ave. Cut-Off. **$350,000**.

Conn., Trumbull—SHOPPING CENTER—Peter S. Hardy, 16 Hardy Lane, shopping center, Main St. **$350,000**.

▲ **D. C., Wash.**—APARTMENT—Relaest Corp., 25 Broad St., New York, N. Y., plans by Berla & Abel, 2000 P St. N.W., 8 story, 241-unit, brick, cinder block, concrete apartment, 2900 39 St. N.W. **$4,000,000**.

▲ **Fla., Coral Gables**—HOTEL, etc.—Bowman Ashe Hotel Corp., c/o M. Tony Sherman, archt., 1101 N. E. 79 St., Miami, 3 story, bsmnt., 102-room, concrete block, hotel and swimming pool, Ponce deLeon Blvd. between Santillane and Antilla Ave. **$1,000,000**. CD 1/14/52.

Fla., Deland—DORMITORY—Stetson University, Deland, plans by Griffen & Gomon, Box 1671, Daytona, men's dormitory. **$344,000**. CD 1/20/53.

Iowa, Des Moines—SHOPPING CENTER—Sears-Roebuck Co., 925 S. Homan St., Chicago, Ill., store bldg., at Merle Hay Plaza Shopping Center, **$500,000**.

▲ **Md., Baltimore**—DORMITORY—College of Notre Dame, North Charles St., Baltimore, dormitory, **$1,040,000**.

Md., Wheaton—SANCTUARY—Wheaton Baptist Church, Georgia Ave. and Viers Mill Rd., plans by McLeod & Ferrara, 1200 18 St. N.W., Wash., D. C., sanctuary, **$500,000**. Bids about the first of 1958.

Minn., Minneapolis—SERVICE CENTER—Owner, c/o Thorshov & Cerny, archts., 400 Metropolitan Bldg., 1 story, bsmnt. children's and family service center, Eighth St. between 4 and 5 Ave. S. **$350,000**.

▲ **Neb., Lincoln**—HOSPITAL—Bryan Memorial Hospital 4848 Sumner St., hospital addn. **$2,250,000**. CD 4/2/53.

Neb., Lincoln—CHURCH—Holy Trinity Episcopal Church, 1200 J St., church, 61st and A Sts. **$400,000**.

Neb., Norfolk—HOSPITAL—Lutheran Hospital, Norfolk, hospital addn. **$418,875**.

Neb., Omaha—HOSPITAL—Immanuel Hospital, 4612 N. 34 St., 2 top floors hospital. **$412,460**.

N. H., Nashua—HOSPITAL—Memorial Hospital, 8 Prospect St., plans by Markus & Nocka, 251 Columbus Ave., Boston, Mass., hospital addn., alterations, Prospect St. **$350,000**. Constr. 1958.

N. J., Brigantine—MOTEL, etc.—Louis Chanese, 3640 Brigantine Blvd., 25 unit motel, swimming pool and parking, **$344,000**.

N. J., Jamesburg—CHURCH—Diocese of Trenton and Parish of St. James, plans by Ricker & Axt, 6115 Hudson Ave., West New York, Romanesque style brick face, limestone trimmed church, with future auditorium and cafeteria in bsmnt. **$350,000**.

▲ **N. J., Morris Plains**—SHOPPING CENTER—Joseph Talbot, 171 Great Neck Rd., Great Neck, shopping center, Littleton Rd. **$2,000,000**.

▲ **N. J., Paramus**—SHOPPING CENTER—Grand Union Co., 100 Broadway, East Paterson, plans by Kelley & Gruzen, 60 Park Pl., Newark, shopping center, Linwood Ave. and Rte. 17. **$1,500,000**.

N. Y., Brooklyn—APARTMENT, etc.—Ben Okun, 90-50 Parsons Blvd., Jamaica, plans by Seelig & Finkelstein, 153 Pierrepont St., Zone 2, 6 story apartment with 100 apartments and 52-car garage, 33 E. 48 St. **$950,000**.

N. Y., Buffalo—EDUCATION, etc.—Sisters of Charity Hospital, Sister Alberta, admin., 2157 Main St., 3 story, brick education bldg. and residence for student nurses. **$800,000**.

Tex., Amarillo—MEDICAL TOWERS, etc.—Jim Parks Lumber Co., 1913 Canyon Hy., plans by John Ward, Jr., 721 W. 7th St., 4 story Medical Towers Bldg., **$400,000**; 1 story High Plains Neurological Center, **$350,000**.

▲ **Tex., Grand Prairie**—DWELLINGS—Center Constr., Co., 4606 Greenville St., Dallas, 21 dwellings **$345,000**; 24 dwellings, **$349,500**; 27 dwellings, **$355,000**; 32 dwellings, **$378,175**; 29 dwellings, **$363,190**, in south side of city.

▲ **Tex., Grand Prairie**—DWELLINGS—A. E. Sharp & Sons, 124 E. Main St., 26 dwellings, **$365,100**, 23 dwellings, **$347,500**; 18 dwellings, **$353,125**; 20 dwellings, **$360,000**; 28 dwellings, **$377,450**, in Phillips Park Addn. and Sharpston Heights.

▲ **Tex., Houston**—DWELLINGS—Woodshire Bldgs. Co., Inc., 9211 Woodshire St., Houston, plans by Crochet & Carroll, 6332 Long Dr., 10 dwellings **$347,500** 15 dwellings **$368,000**; 11 dwellings **$350,500**; 16 dwellings **$362,500** in Section 3 of "Woodshire" Addn.

Tex., Midland—OFFICE, etc.—Key Stone Properties, Midland, or c/o Harry C. Hoover, archt., 3616 Cedar Springs, Apt. 2, Dallas, 12 story addn. above existing bldg., 140,000 sq. ft., steel frame office, garage **$900,000**. Mulling & Powell, c/o Insuromedic Bldg., Dallas, consult. engrs.

Wash., Spokane—HOSPITAL—Sacred Heart Hospital, W. 101 8th St., hospital addn. **$481,000**, Work may start this year.

▲ **Wash., Tacoma**—SHOPPING CENTER—Allied Owners, Inc., 224 Dexter St., Seattle, 1,000,000 sq. ft. shopping center, near S. 40 and Pine Sts. **$20,000,000**. Rezoning of property to be sought.

▲ **Alaska, Anchorage**—HOSPITAL—Providence Hospital, Anchorage, hospital **$3,000,000**. CD 11/16/53.

Ont., Sudbury—NURSES RESIDENCE—Sisters of St. Joseph, 720 McLaren St., North Bay, plans by Fabbro & Townsend, 251 Lorne St., 125-room nurses' residence, Beaton Subdivision. **$350,000**.

▲ **Ont., Toronto**—TEMPLE—Holy Blossom Temple, Bathurst St., plans by J. Brenzel, 658 Spadina Ave., and John B. Parkin Assocs., 1500 Don Mills Rd., 3 story Temple addn. **$1,250,000**.

▲ **Ont., Toronto**—RESIDENTIAL—Sunbeam Construction, c/o Town Planning Consultants Ltd., planning consultants, 614 Church St., residential development west side of Golf Club Rd., 1,000 ft. south of Lawrence Ave. E., Over **$2,000,000**.

▲ **Que., Levis**—PROVINCIAL HOUSE, etc.—Freres Maristes, Ave. Plante, Levis, plans by Adrien Dufresne, 505 rue Royale, Beauport, 2 and 3 story, bsmnt., 200 x 300 ft. provincial house, juvenat and normal school. **$1,000,000**. Bids soon.

Que., Montreal—APARTMENT—J. Levinschi, c/o Greenspoon, Freedlander & Dunne, archts., 4141 Sherbrooke St. W., 4 story, 171x154 ft., wood and brick walls apartment, concrete fdn. on Cote des Neiges Rd., **$500,000**.

▲ **Que., Montreal**—OFFICE DEVELOPMENT—Webb & Knapp (Canada) Ltd., 1010 St. Catherine St. W., master plans by I. M. Pei & Assocs., 385 Madison Ave., New York, N. Y., U. S. A., office building development 4.4 acres north of Dorchester St. W. in downtown Montreal, first phase, incl. 40 story office and plaza sub-surface parking, **$75,000,000-$100,000,000** Severud-Elstad-Krueger, 415 Lexington Ave., New York, N. Y., U. S. A., structural engrs. Cosentini Associates, 10 Columbus Circle, New York, N. Y., U. S. A., mechanical engrs, for master plans.

INDUSTRIAL BUILDINGS

▲ **Calif., Saratoga**—PLANT—The Paul Masson Vineyards Co., c/o John S. Bolles, archt., Pier 5, San Francisco, winery, bottling and aging plant. **$5,000,000**.

▲ **Conn., Bloomfield**—RESEARCH CENTER—Royal-McBee Corp., Westchester Ave., Portchester, N. Y., plans by Elliot, Noyes & Assocs., 105 Main St., New Canaan, 2 story, 75,000 sq. ft., campus type research center **$2,000,000**. Elmer H. Dresher, 150 New Park Ave., Hartford, owners staff engr. CD 5/2.

▲ **Conn., East Hartford** — LABORATORY — Pratt & Whitney Aircraft, 400 Main St., plans by Albert Kahn Associated Architects & Engineers Inc., New Center Bldg., Detroit, Mich., rein.-con., steel Willgoos Turbine Laboratory exten., Pent Rd. **$1,286,000**. George H. Miehls, 345 New Center Bldg., Detroit, Mich., consult. engr.

Conn., Milldale—FACTORY—Clark Bros. Bolt Co., Inc., Canal St., plans by Gordon MacMaster, Bethany Mountain Rd., Cheshire, 300x64 ft., factory to mfg. bolts, nuts, screws, and rivets, **$192,000**.

Conn., Norwalk—FACTORY—Boots Aircraft Nut Corp., Newtown Ave., plans by William A. Grey, Reading, factory addn., Newtown Ave. **$100,000**.

Conn., Stamford—RESEARCH CENTER—Columbia Broadcasting System, Inc., 485 Madison Ave., New York, N. Y., plans by Skidmore, Owings & Merrill, 425 Park Ave., New York, N. Y., research center, High Ridge Rd. **$100,000**. CD 6/11/56.

▲ **Conn., Stamford** — WAREHOUSE — First National Stores, Inc., 5 Middlesex Ave., Boston, Mass., plans by Ganteaume & McMullen, 99 Chauncey St., Boston,

(Continued on page 136)

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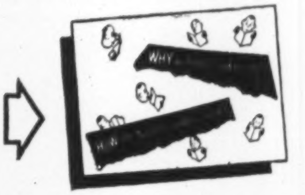

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Advertisement for Bids

CONTRACT C-1

Bids to be opened October 3, 1957

for a

COMPLETE TOLL HIGHWAY COMMUNICATIONS SYSTEM

Proposals for Contract C-1 will be received by The Illinois State Toll Highway Commission at its office at 20 North Wacker Drive, Chicago 6, Illinois, until 11:00 A.M. Central Daylight Savings Time on Thursday, October 3, 1957, and then immediately taken to Suite 631, 20 North Wacker Drive, Chicago, Illinois and publicly opened and read aloud.

The work to be done under this contract shall be commenced on November 1, 1957 or such earlier date as may be mutually agreed upon between the Commission and the Contractor. All work under Stage I of the contract shall be completed on or before July 31, 1958, and all work under Stage II of the contract shall be completed on or before December 31, 1958. The work consists of:

The completion of design, the manufacture, delivery, installation, testing and maintenance for a period of ten (10) years of a complete communications system for the Northern Illinois Toll Highway consisting of all communications equipment, recording devices, towers, toll data collection receiving and transmitting equipment.

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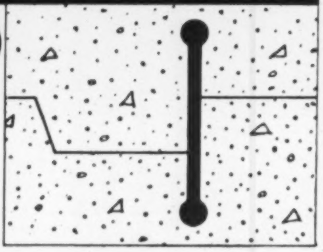

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See Sweet's, or Write for Information.

WILLIAMS

EQUIPMENT and SUPPLY CO.

6001 E. McNichols Rd., Detroit 12, Mich.

(Continued from page 134)

Mass., warehouse, on 16-acre downtown site. **$4,000,000.** Site changed. CD 3/19, under Conn., Greenwich.

▲ **Ill., Glenview**—WAREHOUSE, etc.—Edler & Co., 8109 Skokie St., plans by Don Erickson, 1873 Busse Hy., Des Plaines, 1 story, brick, 150,000 sq. ft. warehouse and disposal plant (moving and storage) south side Glenview Rd. between Dearlove and N. W. R. R. near Milwaukee Ave., near here. **$1,000,000.**

Ky., Louisville—FACTORY—Shuler Axle Co., Inc., 2901-S 2nd St., plans by Harstern, Louis, & Henry, 200 McDowell Bldg., 505 S. 3rd St., Zone 1, axle factory, Strawberry Lane. **$150,000.**

▲ **La., Port Sulphur**—PLANT—Cuban Nickel Co. (sub. Freeport Sulphur Co.), 161 E. 42nd St., nickel and cobalt plant. **$100,000,000.**

Mass., Dorchester—GARAGE—Owner, c/o Lester N. Lechter, archt., 739 Boylston St., Boston, masonry, 36 truck, garage. **$100,000.**

▲ **Mass., Dorchester**—WAREHOUSE, etc.—Salada Tea Co., Berkeley and Stuart Sts., Boston, warehouse and office, Over **$1,000,000.** Constr. 1958.

▲ **Minn., Minneapolis**—GENERATING PLANT—Northern States Power Co., A. S. King, pres., 15 South Fifth St., 150,000 kw unit addn., at Black Dog Generating Plant, on Minnesota River, south of Twin Cities. **$25,000,000.** Pioneer Service & Engineering Co., 231 South LaSalle St., Chicago, Ill., consult. engr. CD 8/30.

Mo., St. Louis Co. — WAREHOUSE, etc. — Minnesota Mining & Manufacturing Co., 3700 Forest Park Blvd., St. Louis, Zone 8, 1 story, 70,000 sq. ft. warehouse incl. 120,000 sq. ft. office, 10-acre tract in Lindbergh-Warson Industrial Center. Over **$500,000.** Site purchased. CD 11/11/55, under Industrial Properties, Inc., as owner.

Mo., St. Louis Co.—WAREHOUSE, etc.—St. Louis County Tile Co., 8864 Ladue Rd., St. Louis Co., Zone 24, 56,000 sq. ft., warehouse, office and showroom in Lindberg-Warson Industrial Center. Over **$100,000.** CD 11/11/55, under Industrial Properties, Inc., as owner.

N. Y., New York—FACTORY, etc.—Acme & Dorf Metal Door Corp., 1010 E. 173 St., Zone 60, plans by Saul Wexler, c/o owner, 1 story factory and warehouse, Bronx River Ave. near Watson Ave. **$125,000.**

O., Akron—RESEARCH—Goodyear Aircraft Corp., Akron Airport, Akron, plans by H. K. Ferguson Co., archts. consult. engr. 1783 E. 11th St., Cleveland, 440 ft. long, 4th floor addn. to engineering research bldg. **$700,000.**

▲ **O., Cincinnati**—GARAGE—Condon Enterprises, c/o C. H. Keating, Jr., Carew Tower, Cincinnati, 350-car 7-level garage, 514 Main St. **$1,000,000.** National Garage, Inc., 1009 Cass St., Detroit, Mich., consult. engr. Constr. early 1958.

Okla., Oklahoma City—PLANT—Aero Design & Eng. Co., N.W. 50th and W Sts., assembly plant. **$300,000.**

Pa., New Castle—PLANT—New Castle News, N. Mercer St., plans by Robert W. Dickerson, 2063 E. 4 St., Cleveland, O., 3 story, bsmnt. 62x161 ft. brick, aluminum newspaper printing plant. **$380,000.**

▲ **Wash., Bellevue**—INDUSTRIAL—P. Chilton, Medical-Dental Bldg., Seattle 1, plans by Decker, Christenson & Kitchin, 1411 4th Ave., Seattle, Zone 1, three 100x160 ft. rein.-con. industrial bldgs. in Overlake Industrial Park. **$1,000,000.**

Wash., Tacoma—TRACTOR SERVICE and SALES CENTER—Murphy-Campbell Co., 2719 S. Tacoma Way, plans by Lea, Pearson & Richards, 240 S. Stadium Way, 30,000 sq. ft. rein.-con. tractor service and sales center. **$250,000.** Work to start this fall.

Alta., Calgary—PLANT, etc.—Coca-Cola Ltd., Calgary, plans by Rule, Wynn & Rule, 513 8 St. S.W., 1 story 136x273 ft., steel, brick, bottling plant, offices and warehouse, 66 Ave., southwest of Macleod Trail. **$375,000.**

Ont., Sarnia—PLANT—DuPont Co. of Canada (1956) Ltd., 1135 Beaver Hall Hill, Montreal, Que., linear polyethylene plastic mfg. plant, Moore Twp., south of here. Over **$100,000.**

Que., Havre Aubert—PLANT—Island Products Co., Head Office, Amherst, N.S., fish freezing plant near L'Anse a Cadet. **$100,000.**

▲ **Que., Montreal**—REFINERY—Canadian Petrofina Ltd., 1015 Beaver Hall Hill, Montreal, oil refinery imprvs. north of Sherbrooke St. E., east of Broadway, Montreal East. **$3,000,000.**

Que., St. Hyacinthe—PLANT—Mercury Wire & Nail Ltd., c/o Mayor E. Picard, City Hall, plant, Notre Dame St. **$100,000.**

UNCLASSIFIED

Mich., Grand Rapids—PARKS—Bd. Supervs. Kent Co., Earl R. Knutson, bldg. comr., bond election Oct. 1, expan. of parks and animal shelter. **$356,000.**

▲ **Ohio**—NATURAL GAS PIPE LINE—Ohio Fuel Gas Co., 109 N. Front St., Columbus, natural gas pipe lines in 11 counties to replace about 33.9 mi. existing lines in Lorain, Belmont, Guernsey, Champaign, Logan, Greene, Clark, Madison, Fayette, Licking and Richland Counties. **$1,241,500.**

▲ **Texas**—RURAL DISTRIBUTION LINE—Central Texas Electric Co-operative, Inc., Fredericksburg, 262 mi. electric distr. line and sys. imprvs., Gillespie Co. **$1,135,000.** CD 7/19/56.

Texas—RURAL DISTRIBUTION LINES—Cherokee County Electric Co-operative Assoc., Rusk, 103 mi. electric distr. line and sys. imprvs., Cherokee Co. **$820,000.**

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
September 24 Massachusetts September 26 Rhode Island

BUILDINGS—BA

Vt., **Winooski**—SCHOOL—BA 9/25—Winooski School Dist., Robert Lull, supt., high school, Richard Property. $755,000. Plans deposit $50. Julian W. Goodrich, 930 Shelburne Rd., South Burlington, archt. Jennison Eng., Inc., 15 Center St., Burlington, engr. CD 8/9.

HEAVY CONSTRUCTION—LB & CA

† **U. S. Eng.**, 150 Causeway St., Boston, Mass., rejected bids June 18, bachelor officers quarters Westover Air Force Base, ENG-19-016-57-236, CHICOPEE, MASS., LB **$723,349**. CD 7/1, under LB.

CONNECTICUT—State Hy. Comn., 165 Capitol Ave., Hartford,
Federal Sign & Signal Co., 8700 S. State St., Chicago, Ill., CA **$988,986**, Proj. 215-47 installing 2,700 traffic signs for Conn. Turnpike, Greenwich to Killingly. Bids Aug. 21, awarded Sept. 9. CD 9/5, under LB.

CONNECTICUT—State Hy. Comn., State Office Bldg., Hartford,
Mariani Constr. Co., 222 Forbes Ave., New Haven, Conn., LB **$658,001** (8 bidders) Proj. 124-90, prestressed, concrete bridge over Naugatuck River and approx. 814 lin. ft. b. conc. on Broad and Pine Sts., Route 8A, Seymour. Bids Sept. 9. CD 8/26.

BUILDINGS—LB & CA

▲ **L and R Constr. of Medford, Inc.**, 84 Main St., North Reading, Mass., LB **$2,119,207**, NORTH JUNIOR HIGH SCHOOL, Oak St., BROCKTON, MASS. City Richard E. Samuelson, inspector of Bldgs., City Hall, Brockton, Mass. Bids Sept. 6. CD 8/21.

Poorvu Constr. Co., Inc., 192 Worcester St., Wellesley, Mass., LB **$553,500**. ELEMENTARY SCHOOL, Western Ave. and Story St., ESSEX, MASS. Town School Housing Comn., c/o Selectmen's Office, Martin St., Essex, Mass. Bids Sept. 5. CD 8/14.

Aberthaw Constr. Co., 60 State St., Boston, Mass., CA **$600,000**. WAREHOUSE and dual occupancy OFFICE, Waltham Industrial Center, WALTHAM, MASS. Cabot, Cabot & Forbes Co., 60 State St., Boston, Mass.

A. F. Taddeo Constr. Corp., 28 Coleman St., Rochester, N. Y., CA **$500,000**. BOWLING ALLEY and RESTAURANT, Route 8, south WINDSOR, CONN. A.M.F. Pinspotters, Inc., 261 Madison Ave., New York, N. Y. Awarded Sept. 5. CD 4/5.

Gramercy Constr. Co., 114 Liberty St., New York, N. Y. CA **$933,822**. Proj. BI D-205A, COMMONS BLDG., University of Connecticut, STORRS, CONN. State P. Wks. Dpt., 165 Capitol Ave., Hartford, Conn. Bids Aug. 21. CD 8/28, under LB.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 10 New York
STREETS AND ROADS
September 26, October 10 New York

† N. Y., **Rome**—STORAGE FACILITIES—BA 10/1—U. S. Eng., 111 E. 16 St., New York, Zone 3, SAC facilities, Griffiss Air Force Base, ENG-30-075-58-3. $500,000-$1,000,000. Extended date. CD 8/28.

▲ **New York**—BA 10/17—The Power Auth. of State of New York, Coliseum Tower, 10 Columbus Circle, New York, Zone 19, Niagara Contract NP 2, furnishing, del. f.o.b. Model City, N. Y., 37500 HP/25,000KVA motor-generators for Tuscarora Power Plant in Lewiston, Niagara Co., SPEC. PA-N-25001. Plans deposit $10. Uhl, Hall & Rich, 230 Congress St., Boston 10, Mass., engrs. CD 8/15.

BUILDINGS—BA

▲ N. Y., **New York**—SCHOOL—BA 10/1—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, geenral construction, plumbing and drainage, heating and ventilating, electrical work and lighting fixtures for P.S. 38 addn. and modernization and conversion to Junior High School, St. Ann's Ave. and Rea St., Bronx Boro. $1,477,000. Plans deposit $25 for general constr.; $10 for each of the others. Simeon Heller, 38-11 Union St., Flushing, archt. Extended date. CD 8/21.

▲ N. J., **Irvington**—SCHOOLS—BA 10/9—Bd. Educ., 1253 Clinton Ave., addns., alterations to Augusta St. School, $500,000; and Madison Ave. School, $750,000. Percy M. Irory, 1087 Springfield Ave., archt. CD 11/20.

N. J., **Dover**—SCHOOL—BA 10/15—Bd. Educ., Twp. Randolph, Mt. Freedom Rd., Dover, 10 room elementary school. $475,000. Frederick Elsasser, 2013 Morris Ave., Union, archt.

BUILDINGS—SLC

▲ N. Y., **Yonkers**—HIGH SCHOOL—Archdiocesan Bldg. Comm., 451 Madison Ave., New York, Zone 22, soon lets contract, St. Barnabas Girls High School. $1,500-000. Starrett & Van Vleck, 267 5th Ave., New York, Zone 16, archts. CD 5/10.

HEAVY CONSTRUCTION—LB & CA

▲† **U. S. Eng.**, 111 E. 16 St., New York 3, N. Y., rejected bids about July 10, dredging to depth of 37 ft. below mean low water involving removal of approx. 467,800 cu. yd. placement measurement all material, incl. ledge rock from New York and New Jersey Channels, Sect. 4, Rock Area 8, Richmond Co., New York, and Union Co., New Jersey, NEW YORK and NEW JERSEY, LB **$2,486,272**. Will re-advertise. CD 7/12, under LB.

▲ **NEW YORK**—State Dpt. P. Wks., The Gov. Alfred E. Smith State Office Bldg., Albany,
Merritt-Chapman & Scott Corp., 17 Battery Pl., New York, N. Y., CA **$2,964,364**. 25 concrete piers and two concrete abutments for Canadian and U. S. approach spans to main spans of an international bridge, Ogdensburg, St. Lawrence Co., N. Y. to Johnstown (Grenville), Ont., Canada. Bids Aug. 8. CD 8/9 under LB.

▲ **Horn Constr. Co., Inc.**, 2174 Hewlett Ave., Merrick, N. Y., LB **$1,525,120** (5 bidders) installing tracks and contact rails, DeKalb Ave. Reconstr., Flatbush Ave. Exten., and Fulton St., Bridge St. to Ashland Pl. Contr. T-122, BROOKLYN, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Sept. 6. CD 8/20.

Stewart M. Muller, Inc., Croton-on-the-Hudson, N. Y., CA **$882,875**, Contr. 899, Saxon Woods Swimming pool northwest of Mamaroneck Ave., overpass of Hutchinson River Parkway, WHITE PLAINS, N. Y. Dpt. P. Wks., Westchester Co., County Office Bldg. White Plains, N. Y. Bids July 24. CD 8/16, under LB.

C. & T. Affiliates, Inc., Collingswood, N. J., CA **$396,-265** Contr. I, installing underground sewers in three separate sections of sewer dist. HARRISBURG, PA. Lower Paxton Twp. Auth., 2771 Paxton St., Harrisburg, Pa. Bids July 18. CD 7/25, under LB.;
Alconn Utilities, Inc., Verona, N. J., CA **$456,190**. Contr. II, CA **$878,221**, Contr. III (Harrisburg).

BUILDINGS—LB & CA

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N. Y., LB **$1,545,000** (11 bidders) PUBLIC SCHOOL No. 270, DeKalb and Classon Aves., BROOKLYN, N. Y. Bureau Constr. Bd. Educ., 42-15 Crescent St., Long Island City 1, N. Y. Bids Sept. 5. CD 8/9.

Eastwood Village Homes, c/o Harry Klein Realty, 26 West Jericho Turnpike, Huntington Station, N. Y. Owner Builds. **$480,000**. 40 HOMES, Jericho Turnpike and Eastwood Blvd., CENTEREACH, N. Y.

Hyman & Sidney Guterman, c/o Stanley H. Klein, archt., 89-31 161 St., Jamaica, N. Y. Owner Builds. **$450,-000**. 18 HOMES, Douglaston Parkway, north of Horace Harding Blvd., DOUGLASTON, N. Y.

RGR Constr. Corp., 31-05 20 Road, Astoria, N. Y., CA **$650,000**. HOSPITAL addn., HOLLIS, N. Y. Terrace Heights Hospital, 87-37 Palermo St., Hollis, N. Y. CD 3/15.

Marcello Mezzullo, Inc., 132 Pearl St., Port Chester, N. Y., CA **$700,000**. RESIDENCE HALL, NEW ROCHELLE, N. Y. College of New Rochelle, 29 Castle Pl., New Rochelle, N. Y. CD 3/18.

▲ **Francis Lewis Homes**, c/o Trylon Realty, 98-89 Queens Blvd., Forest Hills, N. Y. Owner Builds. **$4,500,000**. 300 HOMES, Francis Lewis Blvd. and 259 St., ROSEDALE, N. Y.

▲ **Green-Acres**, c/o Albert B. Mecklenburg Organization, 1038 Northern Blvd., Roslyn, N. Y. Owner Builds. **$1,000,000**. 100 HOMES on north side of Sunrise Hy. between Broadway and Lincoln Ave., SAYVILLE, N. Y.

▲ **Deanin Homes**, 29 Langdon Rd., Farmingdale, N. Y. Owner Builds. **$3,200,000**. 200 HOMES, Jericho Turnpike, 1 mi. east of Smithtown Shopping Center, SMITHTOWN, N. Y.

▲ **Branna Constr. Co.**, 625 Farmers Bank Bldg., Pittsburgh, Pa., CA **$1,393,500**, general construction JUNIOR SENIOR HIGH SCHOOL for Laura Lamar Joint School Bd., HOMER CITY, PA. Pub. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids July 30. CD 8/5, under LB.

▲ **J. Roland Dashiell & Sons**, 647 S. Salisbury Blvd., Salisbury, Md. LB **$1,315,878** (4 bidders) constr. building for chronically ill, housing 200 patients at State Welfare Home, SMYRNA, DEL. Delaware State Welfare Home, Smyrna, Del. Whiteside, Moeckel & Carbonell, 909 Tatnall St., Wilmington, Del., archts. Bids Sept. 11. CD 8/26.

SOUTH

BUILDINGS—BA

Ky., **Madisonville** — HOSPITAL — BA 9/26 — Hopkins County Hospital, Madisonville, 3 story, brick, concrete block, hospital addn. $600,000. Plans deposit $50. Thos. J. Nolan & Sons, 311 Ky. Home Life Bldg., Louisville, Zone 1, archts. CD 3/25.

▲ Fla., **Fort Lauderdale**—HOSPITAL—BA 10/2—District Commission of Broward Co., Court House, 1 thru 4 story, 239x349 ft., concrete block hospital addn., 1621 S.E. 1 Ave. $1,000,000. Plans deposit $50. Wm. T. Vaughn, 909 E. Las Olas Blvd., archt. J. H. Greenhill & Assocs., 6336 N.E. 2 Ave., Miami, mech. engrs. D. E. Britt Assocs., 309 S.E. 9 Ave., struc. engrs. CD 9/12.

HEAVY CONSTRUCTION—LB & CA

▲ **NORTH CAROLINA**—State Hy. Comn., Raleigh,
Blythe Bros. Co., Box 989, Charlotte, N. C., CA **$1,482,-670**, structures U. S. 29, Proj. 8-16525, I-647 (6), Gaston and Mecklenburg Counties. Bids Aug. 27, awarded Sept. 6. CD 9/3, under LB.

▲ **GEORGIA**—State Hy. Dpt., General Office, No. 2 Capitol Sq., Atlanta, Bids opened 9/6,
Ga.—**Bleckley Constr. Co.**, Cochran, Ga., LB **$180,383**, grading, paving 6.68 mi. (Chester-Dexter Rd.) State Rte. 277 and FAS Rtes. 1622 and 653, beginning at State Rte. 126 in Chester and extending northeast to present divided lane paving in Dexter, Fed. Aid Sec. Proj. S-1622 (1) and S-0653 (3), Dodge and Laurens Counties;
Ga.—**Chero Kee Constr. Co.**, Box 279, Hawkinsville, Ga. LB **$287,721**, grading, paving, 1 bridge 4.101 mi. Gay-Concord Rd., FAS Rte. 738, beginning at point approx. 3 mi. southeast Gay and extending east to State Rte. 18, Fed. Aid Sec. Proj. S-0738 (5), Meriwether and Pike Counties;
Ga.—**Knox Bros., Inc.**, Thomson, Ga., LB **$127,027**, grading, paving 5.037 mi. (State 47-Dearing Rd.), FAS Rte. 1721 beginning at State Rte. 47 approx. 3 mi. northeast of Jefferson Co. line and extending northerly to Dearing, Fed. Aid Sec. Proj. S-1721 (1), McDuffie Co;
Ga.—**Bryant, Bryant & Keith**, Gainesville, Ga., LB **$84,772**, grading, paving 2.566 mi. (Clermont-Shoal Creek Rd.) State Rte 284, beginning at end of present pavt. approx. 2.5 mi. northwest of Clermont and extending northwest to State Rte. 115, FASP S-17343 (1), Hall and White Counties;
Ga.—**Clarence Jones & Son**, Jesup, Ga., LB **$216,363**, grading, paving 5.591 mi. Fargo-Okefenokee Wildlife Refuge Rd., FAS Rte. 1222 beginning at end of present pavt. approx. 5.7 mi. northeast of Fargo and extending northeast to Ware Co. line, FASP S-1222 (2), Clinch Co.;
Ga.—**Ledbetter-Johnson Co.**, Rome, Ga., LB **$455,528**, grading, paving 1 bridge, Summerville-Lafayette Rd., State Rte. 1, U. S. Rte. 27 beginning at end of present curb and gutter sect. approx. ½ mi. south of Trion and extending north on relocation to beginning of new constr. at "Old Alabama Rd.", FAP F-017-3(8), Chattooga and Walker Counties;
Ga.—**Seaboard Constr. Co.**, Box 567, Brunswick, Ga., LB **$244,813**, grading, paving, 2 bridges Nashville Homerville Rd., State Rte. 168 beginning at end of present pavt. approx 13 mi. west of Hommerville and extending northwest to state Rte. 31, FASP S-1220 (1) Clinch and Lanier Counties;
Ga.—Received no bids Sept. 6, resurf. 6 mi. Camilla-Albany Rd., State Rte. 3, beginning in Camilla and extending north, State Aid Proj. 1538-B (7), Mitchell Co. CD 8/28.

FLORIDA—State Rd. Dpt., Tallahassee,
Cleary Bros. Constr. Co., Box 6397, West Palm Beach, Fla., CA **$678,984**. bridge, approaches over Caloosahatchee River at LaBelle, 0.7 mi. S.P. Job 0706-110, SR 29, Hendry Co. Bids June 27, awarded Sept. 9. CD 7/3, under LB.

BUILDINGS—LB & CA

▲ **Daniel Constr. Co.**, Box 2286, Greenville, S. C., LB **$1,449,000** PHYSICS BLDG., for Science Center, University of Georgia, ATHENS, GA. State University System Bldg. Auth., 244 Washington St. S. W., Atlanta, Ga. Bids Sept. 4. CD 7/22.

▲ **M. B. Kahn Constr. Co.**, 1113 Blossom St., Columbia, S. C., LB **$2,239,484**. low-rent HOUSING GA. 1-5, AUGUSTA, GA. Augusta Housing Auth., Augusta, Ga. Bids Sept. 3. CD 8/12.

Walter Strong, 701 Duffy St., Savannah, Ga., LB **$682,200**. West Side HIGH SCHOOL, SAVANNAH, GA. State School Bldg. Auth., 244 Washington St. S. W., Atlanta, Ga. Oscar Hansen, 15 W. Liberty St., Savannah, Ga., archt. Bids Sept. 5.

Jehle Bros., Inc., 1616 Mount Meigs Rd., Montgomery, Ala., LB **$681,900** LOW RENT HOUSING, ALBERTVILLE, ALA. Albertville Housing Auth., Albertville, Ala. Bids Sept. 5. CD 11/9.

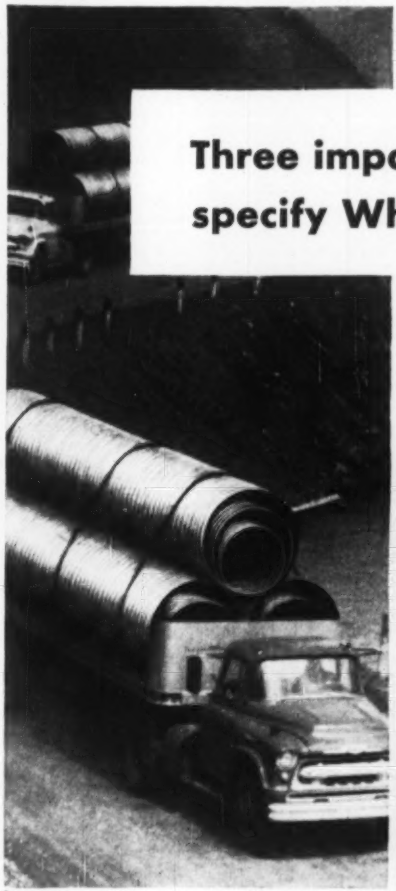
▲ **Alabama Power Co.**, Power Bldg., Birmingham, Ala., cancelled bids to have been opened Sept. 11, 7 story OFFICE BLDG. ANNEX, BIRMINGHAM, ALA. Est. **$2,000,000**. CD 9/5.

▲ **Hewitt Constr. Co.**, 1509 3rd Ave., Columbus, Ga., CA Total est. **$100,000,000-$150,000,000**, grading site for STEAM POWER GENERATING PLANT, WILSONVILLE, ALA. Southern Electric Generating Co., (Alabama Power Co., Ala. Power Bldg. and Georgia Power Co., 75 Marietta St., Atlanta Ga.) Southern Services, Inc., 600 N. 18th St., Birmingham, Ala., engrs. Substructure contract to be let in December. CD 3/26;
General Electric Co., River Rd., Schenectady, N. Y., CA turbines, (Wilsonville, Ala.);
Babcock & Wilcox, 161 E. 42nd St., New York, N. Y., CA boilers for plant (Wilsonville, Ala.).

Fain & Johnson, P. O. Box 872, Lexington, Ky., CA **$852,034**. 1 and 2 story, brick on concrete block PUBLIC HOUSING UNITS, MOUNT STERLING, KY.

(Continued on page 140)

Three important reasons why you should specify Wheeling Corrugated Metal Pipe



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(Continued from page 138)

Mount Sterling Housing Comn., Mount Sterling, Ky. Bids July 30, awarded Aug. 30. CD 8/7, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 1 Ohio

BUILDINGS—BA

▲ **Mich., Detroit**—EXHIBIT, etc.—BA 11/6—City, Frank G. Schomanske, pres. Civic Center Comn., City Hall, Contract MH-52-C, superstructure for 1,012,000 sq. ft. exhibit bldg., 100,000 ft. parking garage in each of two levels below exhibit level and a three-lane circular ramp to roof parking area 350,000 sq. ft., 318 ft. diam. convention hall and two-level 90,000 sq. ft. each level entrance plaza, Civic Center. Plans deposit $100. Giffels & Vallet, Inc., L. Rossetti Architects & Engineers, 1000 Marquette Bldg., Zone 26, archts.-engrs. CD 8/27/64.

▲ **Ill., Moline**—OFFICES—BA About 10/15/58—John Deere & Co., 1325 Third Ave., administrative offices bldg. $5,000,000. Eero Saarinen, West Long Lake Rd., Bloomfield Hills, Mich., archt.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—State Dpt. Hys., State Office Bldg., Columbus, Zone 15,

O.—**Ohio Road Paving Co.**, 30 E. Broad St., Columbus, O. LB **$126,005**, est. $126,000 (1 bidder), Type T-30, B-35, T-35, 10.07 mi. Proj. 392, Crawford and Wyandot Counties; LB **$241,629**, est. $263,630 (1 bidder) Type T-30, B-35, T-35, 15.28 mi. Proj. 401, Huron Co.; LB **$172,286**, est. $179,700 (1 bidder), Type T-30 and T-35, 14.27 mi. Proj. 406, Sandusky, Seneca and Wood Counties; LB **$118,116**, est. $109,770, (1 bidder), Type T-30, B-35, T-35, 6.25 mi. Proj. No. 394, Erie and Huron Counties;

O.—**Edgar Spring, Inc.**, Box 112, New Philadelphia, O. LB **$78,114**, est. $81,820 (1 bidder), Type T-30, B-35, T-35, 4.43 mi. Proj. No. 400, Holmes Co.; LB **$197,970**, est. $197,440 (1 bidder), Type T-30, B-35, T-35, 10.6 mi. Proj. No. 389, Carroll and Harrison Counties;

O.—**Hatcher Brothers, Inc.**, 2002 Commercial St., Mingo Junction, O. LB **$774,597**, est. $761,000 (5 bidders), Type T-35 on B-119, 4.796 mi. SR 151-(0.00-4.81), S-780 (4), Village of Bowerston, Proj. No. 375, Harrison Co.; LB **$90,662**, est. $107,700 (5 bidders) Type T-71 and structure repair 0.148 mi. US R 22-2.63, Proj. No. 377, Harrison Co.;

O.—**The Ohio Engineering Co.**, 105 Sixth St., Lorain, O. LB **$92,000**, est. $95,410 (3 bidders), Type T-30, B-35, T-35, 10.61 mi Proj. No. 398, Hancock Co.;

O.—**The City Asphalt & Paving Co.**, 120 Pike St., Youngtown, O. LB **$192,654**, est. $188,690 (1 bidder) Type T-30, B-35 and T-35, 12.79 mi. Proj. No. 387, Ashtabula Co.;

O.—**Shelley & Sands, Inc.**, Thornville, O. LB **$165,939**, est. $194,260 (3 bidders), Type T-30, B-35, T-35, 14.95 mi. Proj. No. 402, Knox Co.;

O.—**Fenton Constr. Co.**, P. O. Box 310, Ashland, O. LB **$125,039**, est. $122,510 (1 bidder), Type T-30, T-32, T-31, 28.33 mi. Proj. No. 408, Ashland, Lorain, Medina and Richland Counties;

O.—**The Newark Asphalt Paving Co.**, 1242 Mt. Vernon Rd., Newark, O. LB **$156,099**, est. $189,300 (3 bidders), Type T-30, B-35, T-35, 11.433 mi. Proj. No. 403, Licking Co.;

O.—**The Churchill Constr. Co.**, 1533 Shawnee, Rd., Lima, O. LB **$108,999**, est. $107,870 (2 bidders), Type T-30, B-35, T-35, 8.69 mi. Proj. No. 399, Hardin Co.;

O.—**N. J. LeCrone Constr. Co.**, 1396 King Ave., Columbus, O. LB **$83,800**, est. $116,000 (9 bidders), Type B-35, T-35, 6.47 mi. Proj. No. 393, Delaware Co.;

O.—**John R. Jurgensen Co.**, 3535 Roundbottom Rd., Cincinnati, O. LB **$121,567**, est. $142,350 (2 bidders), Type T-30, B-35, T-35, 14.63 mi. Proj. No. 390, Champaign and Clark Counties;

O.—**Pinckney P. Brewer & Sons Co.**, 7455 Dawson Rd., Cincinnati, O. LB **$83,317**, est. $83,180 (1 bidder), Type T-30, T-35 and B-35, 9.92 mi. Proj. No. 391, Clermont Co.;

O.—**The Koski Constr. Co.**, National Bank Bldg., Ashtabula, O. LB **$187,004**, est. $189,160 (1 bidder), Type T-30, B-35, T-35, 11.29 mi. Proj. No. 388, Ashtabula Co.;

O.—**Sidwell Brothers**, R. F. D. No. 2, S. Zanesville, O. LB **$152,002**, est. $182,800 (9 bidders), Type T-35 on B-20 and structure 0.582 mi. SR 668-(9.64-9.95), Village of Junction City, Proj. No. 382, Perry Co.;

O.—**Soda & Luscher Constr. Co., Inc.**, 1345 Warren Ave., Niles, O. LB **$153,941**, est. $152,900 (2 bidders), Type T-35 and structure 2.118 mi. CR No. 25, S-209 (2); Proj. No. 374, Ashtabula Co.;

O.—**A. J. Baltes, Inc.**, 11 Olive St., Norwalk, O. LB **$185,896**, est. $226,800 (11 bidders), Type T-35 on B-119, 0.728 mi. T. R. 121-"C", S-476 (1), Proj. No. 376, Summit Co. CD 8/12.

INDIANA—State Hy. Comn., State House Annex, Indianapolis,

Stone City Constr. Co., 910 R St., Bedford, Ind., CA **$784,248**, est. $830,241, paving, grading, drainage 6.177 mi. S-400 (6), Contr. No. R-4153, Dearborn Co. Bids May 28. CD 6/7, under LB.

INDIANA—State Hy. Dpt., John Peters, chn., State House Annex, Indianapolis,

Middle West Roads Co., P. O. Box 51, Louisville, Ky., CA **$504,504**, bit. base wid'n., resurf., bit. pavt. with stone base 13.979 mi. SR 3 from SR 7 northwest of North Vernon to just north Wesport, Contr. No. RS-4214 S-328 (6), Jennings and Decatur Counties. CD 8/22, under LB.

BUILDINGS—LB & CA

T. S. Willis, 20 E. Milwaukee St., Janesville, Wis., CA **$832,265** (7 bidders) general contract Union HIGH SCHOOL, WALWORTH, WIS. Bd. Educ., Walworth, Wis. Bids Aug. 29. CD 7/31.

▲ **Bryant & Detwiler Co.**, 2110 Penobscot Bldg., Detroit, Mich., CA **$10,000,000**. 14 story main OFFICE BLDG., will cover the block within Woodward, Griswold, Fort and Congress Sts., DETROIT, MICH. National Bank of Detroit, 660 Woodward Ave., Detroit, Mich. Bids Aug. 30. CD 8/8.

▲ **Harry E. Wolfe, Inc.**, 33235 West 7-Mile Rd., Livonia, Mich., Owner Builds. **$5,000,000**. brick HOUSES, Livonia Hills Estates, ½ acre site on 8-Mile Rd., west of Farmington Rd., LIVONIA, MICH.

▲ **Silco Homes, Inc.**, 18618 Wyoming St., Detroit, Mich., CA **$5,400,000**, 225 brick HOMES, 12-Mile and Greenfield St., SOUTHFIELD, MICH. Anchor Agency, Inc., 3954 W. 12-Mile Rd., Berkley, Mich.

WEST OF MISSISSIPPI

BUILDINGS—BA

▲ **Mo., Kansas**—MOTEL—BA 9/25—Prom Investment Co., c/o Abe Yeddis, 7500 E. 12 St., Kansas City, Mo. 108-room 6 story motel and 149-car parking lot, restaurant, lounge, $1,000,000. Extended date. Plans deposit $100. Windrom H. Aglund & Venable, Chisca Hotel, Memphis, Tenn., archts. Manuel Morris, 724 Railway Exchange Bldg. Kansas City, Mo., archt. CD 7/11.

▲ **Okla., Clinton**—HOUSING—BA 10/15—Eighth Naval Dist., at Bldg. S-420, Foss, Okla., 450-unit Capehart family housing, Clinton-Sherman Air Force Base, over $10,000,000. Plans deposit $100. CD 9/20/55, under Airports.

Tex., Fort Worth—WAREHOUSE—BA 11/7—State Hy. Dpt., c/o D. C. Greer, engr., Austin, masonry, steel, concrete warehouse and shops and equipment storage bldg. Wellview Ave., South West Loop, $490,000. Plans deposit $35. Wilson, Patterson & Assocs. 601 Bailey St. archts.

HEAVY CONSTRUCTION—LB & CA

Bucton Constr. Co., Hazen, Ark., CA **$760,300**, constr. electronic gravity hump yard, incl. automatic controls and switching, PINE BLUFF, ARK. St. Louis Southwestern Railway (Cotton Belt Rte.). J. M. Lowry, ch. engr., Tyler, Tex. Bids Aug. 8. CD 7/24.

Gilmore Constr. Co., 1207 N. 11th St., Omaha, Neb., CA **$924,000** general contract, C. Louis MEMORIAL and the Hattie B. Munroe HOME at University of Nebraska, Medical Center, OMAHA, NEB. University of Nebraska, 12 and R Sts., Lincoln, Neb. Bids Aug. 6. CD 8/14, under LB.

Lee Constr. Co., 9307 Leaside St., Dallas, Tex., Owner Builds. **$575,000** 10 all masonry DWELLINGS, Hockaday Square Subdivision, DALLAS, TEX. CD 8/23.

BUILDINGS—LB & CA

▲ **C. H. Peterson Constr. Co.**, 4020 Minnetonka Blvd., Minneapolis, Minn., LB **$1,362,600** (6 bidders) general contract, Susan B. Anthony JUNIOR HIGH SCHOOL, Irving Ave. S. between 57 and 58 Sts., MINNEAPOLIS, MINN. Bd. Educ., 807 N. E. Broadway, G. R. Arneson, city purch. agt., 301 City Hall, Minneapolis, Minn. Bids Sept. 5. CD 8/7.

▲ **Viggo M. Jensen Co.**, Hy. 6 W., Iowa City, Iowa, CA **$723,696**, JUNIOR-SENIOR HIGH SCHOOL, ELDRIDGE, IOWA. North Scott Community School Dist., Eldridge, Iowa. Bids Aug. 19. CD 8/9.

J. S. Davis & Sons, 624 Towson St., Fort Smith, Ark., CA Est. **$500,000**, 1 story masonry, steel FURNITURE MFG. PLANT, FORT SMITH, ARK. Riverside Furniture Co. Herman Udorij, pres., Fort Smith, Ark. Bassham & Cockram, Kennedy Bldg., Fort Smith, Ark., archts.

Daniel Cary Co., 519 Farm Credit Bldg., Omaha, Neb., Owner Builds. **$600,000**. constr. 50 DWELLINGS, (Southwest Village) at 90th and West Center Rd., OMAHA, NEB.

Ray Ward & Son, 1700 E. Missouri, El Paso, Tex., CA **$612,000**, SCHOOL ADMINISTRATION BLDG., Tex. 54-C-2-GG(FF), YSLETA, TEX. Ysleta Independent School Dist., Ysleta, Tex. Bids Aug. 20.

▲† **R. E. McKee General Contractor, Inc.**, Box 1706, Santa Fe, N. M., CA **$4,503,700**. Sigman BUILDING, LOS ALAMOS, N. M. Atomic Energy Comn., Los Alamos, N. M. Bids Apr. 22. CD 4/26, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 15 Washington

▲ **Calif., Los Angeles**—BA 10/11—Los Angeles Co Flood Control Dist., 12250 Alcazar St., Storm Drain Bond Issue Proj. No. 9, Unit One Line of Los Cerritos Storm Drain, Long Beach, $1,500,000. CD 1/25.

BUILDINGS—BA

Wash., Seattle—SCHOOL—BA 9/27—School Dist. No. 1, 815 4 Ave. N., 25,000 sq. ft. frame addn. to Harrison Elementary School and altering existing school. $500,000. Plans deposit $25. Bindon & Wright, 715 Hoge Bldg., archts. CD 12/31.

Wash., Selah—SCHOOL—BA 10/3—Schol Dist. 119, 5 frame, masonry, 500,000 sq. ft. bldgs. for Junior High School. $600,000. Plans deposit $25. W. H. Rothe & D. Rothe, 807 W. Yakima Ave., Yakima, archts. CD 5/14.

HEAVY CONSTRUCTION—LB & CA

NEVADA—State Dpt. Hys., H. D. Mills, state hy. engr., State Office Bldg., Carson City,

Nev.—**Rice Bros., Inc.**, Lodi, Calif. CA **$872,242**, furnishing materials and constr. portion Primary Hy. Sys. 14.045 mi. US Hy. 6 between Nye-White Pine Co. line and Jct., Preston-Lund Rd., (S. R. 38) F-004-3 (1) White Pine Co.;

Nev.—**B. C. Richter Constr. Co.**, Oroville, Calif. CA **$448,546** portion of State Hy. Sys. from 5 mi. south of Steels Creek in Clover Valley to Jct. U. S. 93 (F. A. Rte. 7) 6 mi. south of Wells, Rte. section FAS 576, Control Section EL-42 Proj. No. S-SG-576 (1) Elko Co. Bids Sept. 5. CD 8/23.

BUILDINGS—LB & CA

▲ **Alfred Brown Co.**, Dooly Bldg., Salt Lake City, Utah, LB **$1,630,273**, DORMITORY facilities at University of Applied Arts, LOGAN, UTAH. Utah State Bldg., J. G. King, supt., 419 State Capitol Bldg., Salt Lake City, Utah. Bids Sept. 10. CD 8/22.

▲ **Bettilyon Constr.**, 201 E. 3rd St., Salt Lake City, Utah, CA Total Est. **$2,000,000**, general contract steel frame roof concrete, block walls, etc., ELECTRONIC MFG. PLANT on 10 acre site on North Temple St., south of U.S. 40 and opposite the Salt Lake Airport, SALT LAKE CITY, UTAH. Litton Industries, Inc., Charles B. Thornton, pres., 255 E. Broadway, Salt Lake City, Utah. CD 8/16;
Pacific Iron & Steel Corp., 11633 S. Alameda St., Los Angeles 2, Calif., steel suppliers (Salt Lake City, Utah).

Doric Co., Dexter Horton Bldg., Seattle 4, Wash., Owner Builds. **$500,000**, Washington HOTEL addn. SEATTLE, WASH. CD 3/26.

▲ **Continental Constr. Co.**, 4671 24th St. Rd., Sacramento, Calif., LB **$1,505,000** (4 bidders) Encina HIGH SCHOOL, 1400 Bell Ave., CARMICHAEL, CALIF. San Juan Union High School Dist., 3738 Walnut Ave., Carmichael, Calif. Bids Sept. 10. CD 8/15.

Carvers Constr. Co., Box 484, Stockton, Calif. CA **$491,900** (4 bidders) AUDITORIUM BLDG. at Modesto Junior College, MODESTO, CALIF. **Modesto** Unified School Dist., c/o Secty., Franklin at Locust Sts. Bids Sept. 3. CD 8/15.

▲ **Secrest & Fish**, 1909 Whittier Blvd., Whittier, Calif., LB **$1,143,362** (11 bidders) 2 story, L shaped, 226x150 ft., face brick LIFE SCIENCE BLDG., RIVERSIDE, CALIF. University of California, Riverside, Calif. Bids Sept. 5. CD 8/12.

▲ **Stanton Reed Co.**, 720 S. Palm Ave., Alhambra, Calif., LB **$1,558,300** (7 bidders) PHYSICAL EDUCATION BLDG. at Goleta Campu, SANTA BARBARA, CALIF. University of Calif., Santa Barbara Campus, Santa Babara, Calif. Bids Aug. 29. CD 8/1

CANADA

BUILDINGS—BA

B. C., West Vancouver—SCHOOL—BA 10/3—School Dist. No. 45, West Vancouver, 3 story, 70 x 247 ft., rein.-con., brick, Junior High School, and 83 x 123 ft. gymnasium-auditorium 23 and upper Levels Hy., $750,000. Thompson, Berwick & Pratt, 1553 Robson St., Vancouver, archts. CD 10/31/56.

HEAVY CONSTRUCTION—LB & CA

▲ **BRITISH COLUMBIA**—B. C. Govt., Parliament Bldgs., Victoria,

Emil Anderson Constr. Co. Ltd., 4482 Main St., Vancouver, B. C., LB **$1,437,594** (8 bidders) Proj. 892 1.31 mi. section Trans-Canada Rd., CPR overhead-Saddle Rock Yale area. Bids Aug. 20. CD 8/8.

ONTARIO—Dpt. of Hys., Parliament Bldgs., Toronto, Bids opened 9/4,

Ont.—**Simkin's Constr. Co.**, Andrews and Jarvis Sts., Winnipeg, Man., LB **$425,675** (10 bidders) grading, culvert, gran. base 10 mi. Hy. 17, Kenora Area;

Ont.—**Roads Resurfacing Co. Ltd.**, Chesterville, Ont., LB **$179,788** (7 bidders) Contr. 57-52, grading, culverts, gran. base, hot mix paving 5.5 mi. Monkland;

Ont.—**H. J. McFarland Constr. Co.**, Talbot St., Picton, Ont., LB **$399,790** (7 bidders) grading, culverts, gran. base 6.9 mi. Hy. 7, Perth. CD 8/20.

BUILDINGS—LB & CA

▲ **M. Sullivan & Son, Ltd.**, Elgin St., Arnprior, Ont., CA **$1,330,649**. FEDERAL BLDG., incl. post office, BELLEVILLE, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids July 31, awarded Sept. 5. CD 8/8, under LB.

Ain & Zakuta, Ltd., 6910 Weseman Ave., Outremont, Montreal, Que., CA About **$550,000**. 3 story, bsmnt. 100x200 ft., rein.-con., block, brick WAREHOUSE, adjacent to 5450 Fullum Ct., MONTREAL, QUE. Reliable Transport Ltd., 5450 Fullum St., Montreal, Que. Bids Aug. 28, awarded Sept. 5. CD 8/26.

U. S. POSSESSIONS

HEAVY CONSTRUCTION—BA

▲ **T. H. Honolulu**—BA 10/17—City-County Govt., Honolulu, T. H., second Koolau Mountain Tunnel. $5,500,000.

(Proposal Advertisement see pp. 155 to 158)

Three Rust-Oleum DIFFERENCES that save you time, money and metal!

GOES ON FASTER

No tedious surface preparations usually required — just scrape and wirebrush to remove rust scale and loose rust — then brush Rust-Oleum 769 Damp-Proof Red Primer right over the remaining rust.

STOPS RUST

Rust-Oleum's *specially-processed* fish oil vehicle works down through the rust into the tiny, microscopic pits in the bare metal where it drives out air and moisture to *stop rust.*

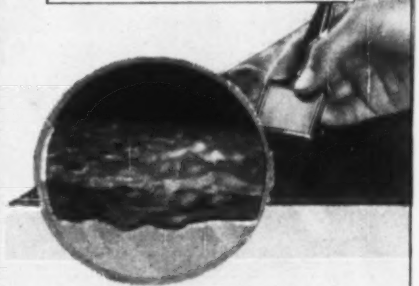
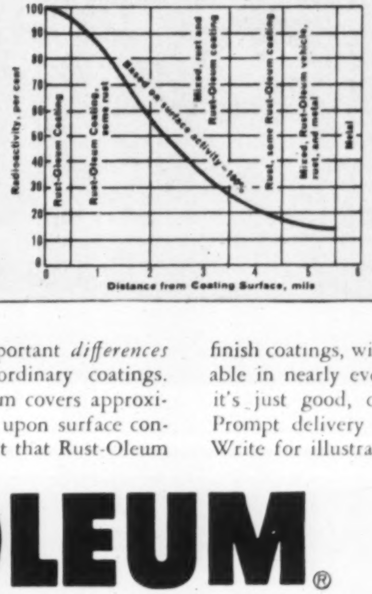
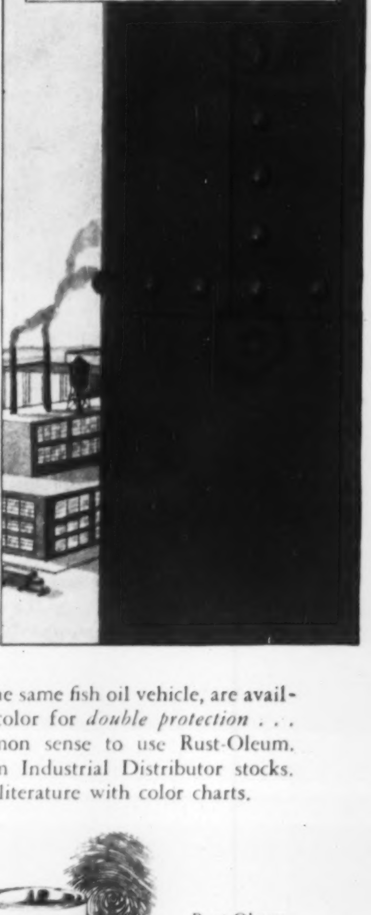


Chart shows results of tracing radio-activated Rust-Oleum through rust to bare metal by Geiger Counter.



LASTS LONGER

Applied over rust, Rust-Oleum lasts longer for the *over-the-years protection* you need. It resists sun, salt water, salt air, fumes, heat, humidity, moisture, weathering.



These are just a few of many important *differences* that separate Rust-Oleum from ordinary coatings. When you consider that Rust-Oleum covers approximately *30% more area,* depending upon surface condition and porosity . . . and the fact that Rust-Oleum finish coatings, with the same fish oil vehicle, are available in nearly every color for *double protection* . . . it's just good, common sense to use Rust-Oleum. Prompt delivery from Industrial Distributor stocks. Write for illustrated literature with color charts.

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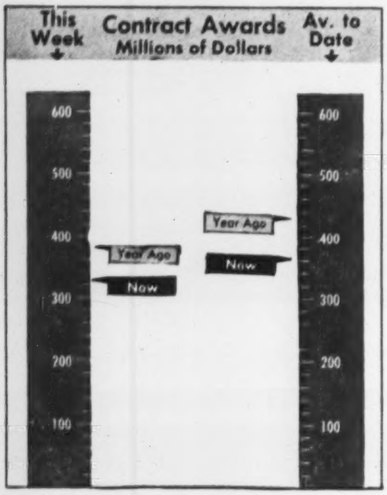
Construction Scoreboard

Activity this Week



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 38 wks 1957	Chge '56-'57
	millions		%
Federal	$17.5	$1,871.5	+46
State and Municipal	92.1	5,515.5	+17
Total Public	109.6	7,387.0	+23
Total Private	219.1	6,357.9	—37
U. S. Total	$328.7	$13,744.9	—14

By-Type of Work	This Week	Cum. 38 wks 1957	Chge '56-'57
Waterworks	$1.7	$255.9	—1
Sewerage	8.3	402.5	—8
Bridges	8.7	534.3	+21
Highways	38.7	2,300.3	+30
Earthwork, Waterways	9.7	847.1	+50
Buildings:			
Public, Excl. Housg.	31.0	1,686.5	+12
Public Housing	2.8	499.1	+114
Private Housing	59.7	2,220.3	—47
Commercial	29.3	1,305.7	+1
Industrial	123.5	2,461.5	—39
Unclassified	15.3	1,231.7	—5
U. S. Total	$328.7	$13,744.9	—14

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

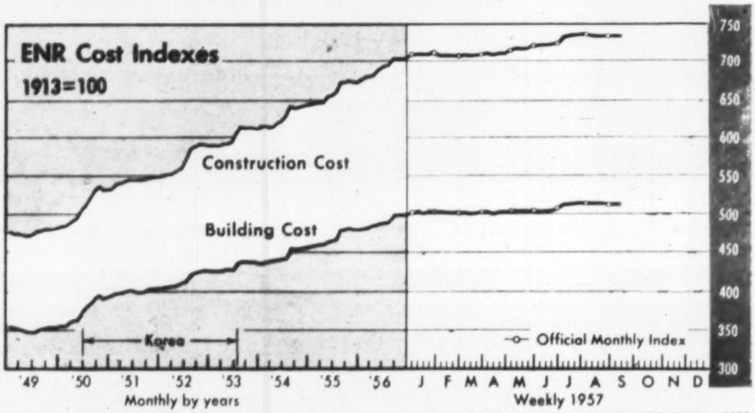
NEW CAPITAL FOR CONSTRUCTION

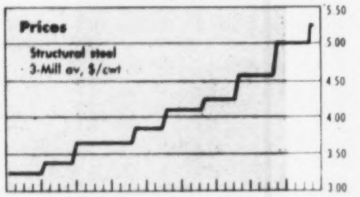
	Week of Sept. 12	Cum. 37 wks 1957	Chge '56-'57
	millions		%
Corporate Securities	$37.6	$4,134.1	+19
State and Municipal:			
All Except Housing	36.5	3,873.5	+21
Housing	...	155.8	+268
Federal Loans	1.1	166.2	+32
Federal Aid	...	2,166.2	+102
Total Nonfederal	$75.2	$10,490.9	+33
Federal Appropriations:			
In U. S.	...	$2,777.0	—20
Outside U. S.	...	29.0	+82
Total New Capital	$75.2	$13,296.9	+17

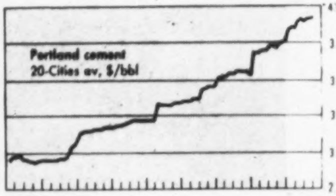
Cost Indexes as of Now

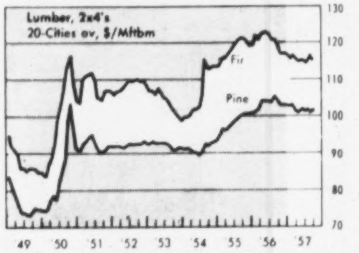
ENR INDEXES (1913 = 100), 20-cities* average	Week of Sept. 12 1957	% Change from Aug. 15 1957	% Change from Sept. 13 1956
Construction Cost	737.54	−0.1	+4.8
Building Cost	516.29	−0.1	+3.4

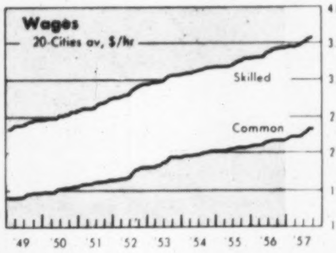
To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518











ENR COST INDEXES IN 22 CITIES, 1913 = 100

City	Construction Cost Sept. 1957	Construction Cost Percent Change from last Month	Construction Cost Percent Change from last Year	Building Cost Sept. 1957	Building Cost Percent Change from last Month	Building Cost Percent Change from last Year
Atlanta	550	0	+5.6	458	0	+3.9
Baltimore	670	0	+11.5	518	0	+4.2
Birmingham	563	0	+1.1	468	0	+2.6
Boston	773	−0.1	+3.6	531	−0.2	+4.5
Chicago	838	0	+5.8	530	0	+4.5
Cincinnati	751	0	+4.7	507	0	+2.8
Cleveland	861	−0.2	+4.2	527	−0.4	+2.3
Dallas	547	0	+2.4	451	+0.4	+1.1
Denver	710	+0.1	+4.4	522	+0.2	~~+3.8~~
Detroit	832	0	+2.7	545	−0.2	+3.2
Kansas City	742	0	+2.8	516	0	+1.4
Los Angeles	778	0	+5.7	508	0	+2.2
Minneapolis	788	0	+4.1	537	0	+2.1
New Orleans	581	0	+2.5	477	+0.2	+3.2
New York	879	0	+3.8	579	0	+1.0
Philadelphia	776	−1.4	+3.9	562	−1.9	+2.6
Pittsburgh	791	−0.3	+8.8	566	−0.5	+7.0
St. Louis	796	+0.1	+4.6	546	+0.2	+3.6
San Francisco	763	0	+5.0	497	−0.2	+2.9
Seattle	756	−0.3	+4.4	467	−0.4	+3.3
U. S.—20 Cities' average	**738**	**−0.1**	**+4.7**	**516**	**−0.2**	**+3.2**
Montreal	587	0	+4.8	452	0	+3.4
Toronto	608	0	−4.6	468	0	−8.4

"We've Been Crowding That Big Drag Line All the Way..."

says Russell Thompson
General Superintendent
Noonan Construction Company
Pensacola, Florida

"... and we couldn't have handled this job at all without fast-laying

CEN-VI-RO CONCRETE PIPE!"

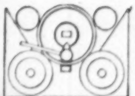
Cen-Vi-Ro's longer lengths really pay off when field conditions are toughest. Here, on this drainage job for the Florida State Highway Department, the soft, dry sand was caving in and filling the ditch almost as fast as it could be dug. The contractor specified Cen-Vi-Ro *for three important reasons:* (1) Longer, faster-laying lengths make it possible to keep up with the digging. (2) The longer lengths give the extra stability needed to easily maintain "line and grade" under difficult laying conditions. (3) Because of easier, faster handling and fewer joints, labor costs can be kept to a minimum.

There are other advantages in using Cen-Vi-Ro Concrete Pipe . . . too numerous and too important to cover in this small space. Write, today, for the complete story.

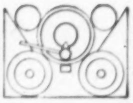
At left, Russell Thompson.
At right, LaVerte Rogers, Resident Engineer, Florida State Highway Department.

THE NAME ITSELF MEANS THE WORLD'S FINEST CONCRETE PIPE!

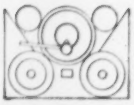
CEN-VI-RO



Comes from **Cen**trifugally spinning dry, "earth-moist" mixture fed into form in uniform layers.



comes from **Vi**bration of spinning form during charging. Special vibrator-tampers do this job.



comes from **Ro**lling mixture under great pressure, applied by specially designed steel roller.

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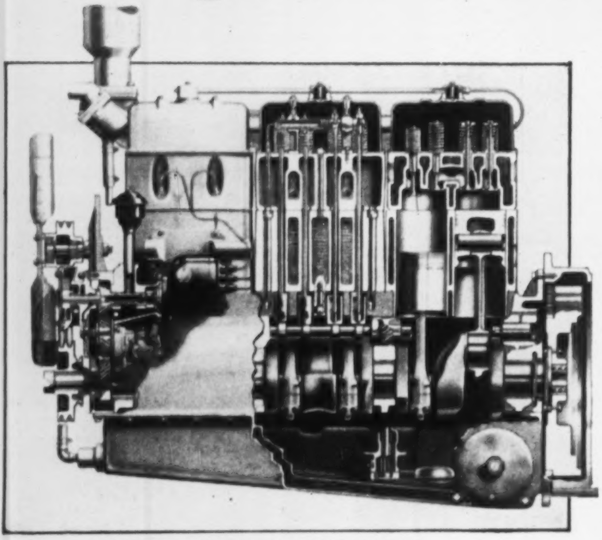
Perfect power-match for your heavy-duty jobs



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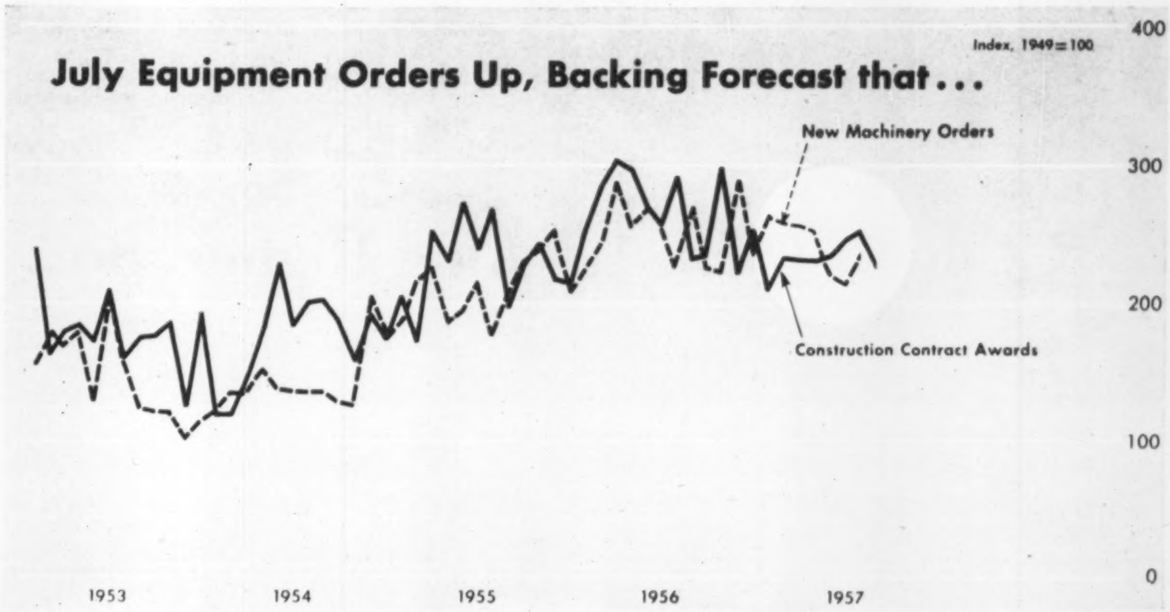

July Equipment Orders Up, Backing Forecast that . . .

Second Half Volume Will Show Increase

The construction machinery manufacturers, after passing through a disappointing first half, are looking forward to a better volume of orders for the last half of this year.

According to companies reporting their forecasts to the McGraw-Hill Department of Economics, the construction machinery makers expect that volume in the July-August quarter will rise 12% above this year's second quarter.

The same reporting firms go further by adding that they expect contractors to place new orders at a gradually increasing pace during the year's final quarter and that the improved order pace also will continue into the first two quarters of next year.

The latest prediction pinpoints the second half increase over the year's first six month total at 5%. And new orders during the first half of 1958 are expected to score an additional increase of 2%.

• First half disappointment—To many firms, business operations for the first six months of this year were a keen disappointment.

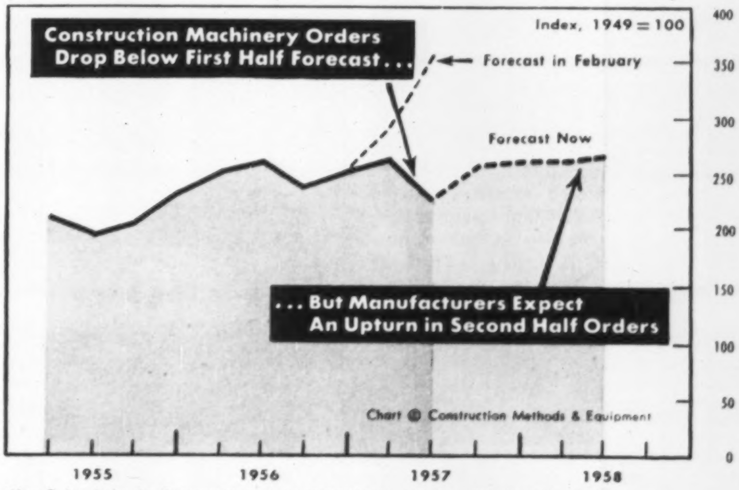
The chart (right) shows how orders in that period were well below the expectations announced last February. In fact, the New Orders Index for Construction and Mining Machinery, declined in the second quarter to its lowest ebb since 1955.

The actual value of 229, based on 1949 = 100, represented a drop of 35% from the forecast made in February.

• Six-month decline—During the first six months as a whole, orders slipped 4% under the total that was registered in the first half of 1956, but they were approximately the same as orders tallied during the period of the second half of last year.

The more optimistic predictions presented by the machinery makers are bolstered by both general and specific examples.

In the overall picture, the McGraw-Hill Department of Economics Index (see above) shows that contractors ordered more dollars' worth of new con-


Construction Machinery Orders Drop Below First Half Forecast . . .

. . . But Manufacturers Expect An Upturn in Second Half Orders

Chart © Construction Methods & Equipment

New Orders Index for Construction and Mining Machinery — McGraw-Hill Department of Economics

SOLID LINE AT TOP shows the wide spread between actual orders and the optimistic forecast of sales made by machinery manufacturers in February, but final half will improve.

struction machinery in July than ever before in that month.

• Healthy jump—In setting a July order record, the new orders rose a strong 12% above volume recorded in June. It was the first month-to-month increase in orders registered since March.

The New Orders Index for July rose to 238 based on 1949 = 100. Although the figure is below the average of 247 for the first six months of this year, it marked the end of a three month decline registered in April, May and June.

The rise in July pushed the orders index 5% above orders tallied in July 1956.

In addition to July new orders registering the first month-to-month increase since March, the increase was the first time since February that monthly orders volume went above the corresponding month of last year.

• Specific cases—The general trend is bolstered by the report issued recently by Caterpillar Tractor Co.

Caterpillar reported July sales at $57.4 million as compared to July 1956 sales of $50.3 million.

ENR Construction Backlog Higher, So...

With the third quarter nearing an end, the year's final quarter will see a healthy head of steam built up in ENR's backlog of proposed construction.

During August, the backlog of proposed construction tallied $2.89 billion. The total represented the biggest backlog of proposed construction tallied $2.89 billion. The total represented the biggest backlog for any month this year.

It is more than three times the low volume of July and 34.4% greater than the total registered in the same month of last year.

Public work, both federal and state and municipal, moving into the backlog in August amounted to $1.86 billion, soaring 350% above the extremely low volume of proposed work in July and scoring a 40% increase over one year ago.

• The certain trend—Of the monthly total in the public works category, however, $1.83 billion was accounted for by state and municipal works with the total being 223.9% above August 1956. In addition, the eight months total for this category—$6.98 billion—is 5% above the comparable eight months of last year, substantiating the prediction that the state and municipal market in 1958 will be an active one (ENR Sept. 12, p. 23).

In the public works category, a total of $945 million flowed into the backlog of proposed earthwork and waterways, work to the tune of $945 million an increase over August 1956 of 1,854%.

The August backlog in bridges showed a 946% increase over last year's same month with a total of $208 million.

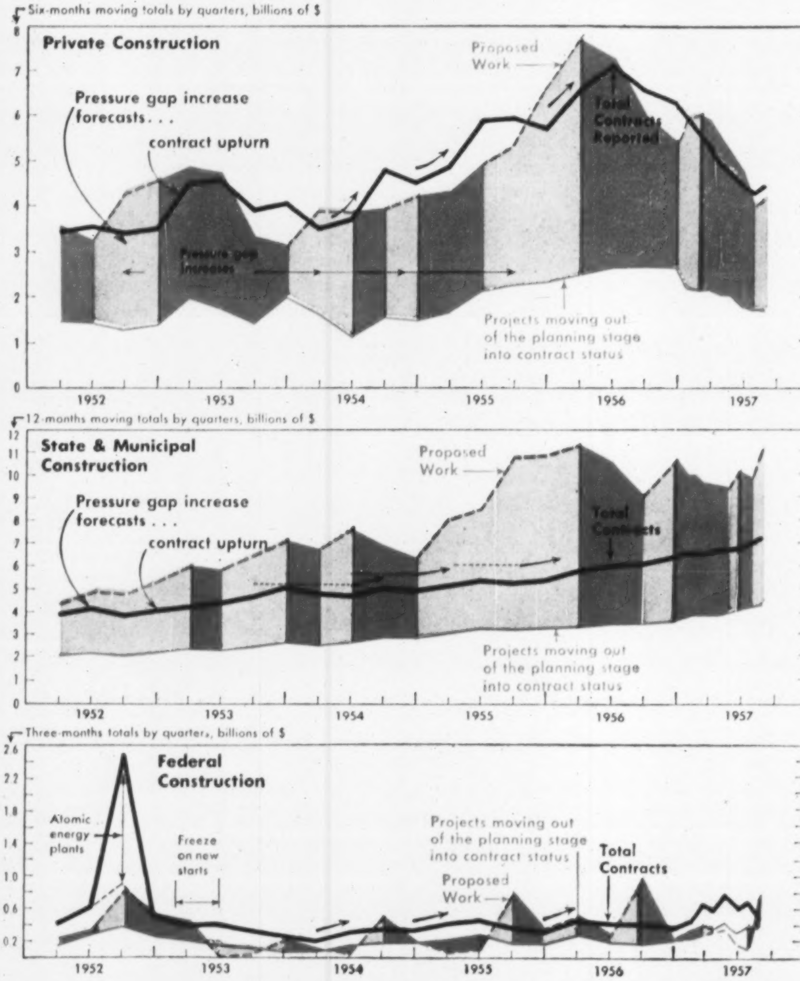
For the eight-month period, earthworks and waterways showed a total of more than $1 billion equal to a 105.9% increase over the backlog total during the first eight months of 1956.

Bridges entering the backlog during this year's first eight months tallied $479 million for an increase of 47.5% over last year.

• Highways a factor—Proposed highway work entering the August backlog amounted to $108 million which was a decrease from August 1956 but the eight months total of $1.7 billion represented a 69.9% increase over last year's comparable period.

The private category in August saw slightly more than $1 billion move into the backlog of proposed work. This was an encouraging increase of 25.9% over August of last year, but the figure for eight months at $6.4 billion is still 28.1% below the amount in the backlog at the end of last year's first eight months.

. . . Pressure Gap Shows More Depth



We All Make Them

Building company claims bid mistake of $630,000

Ross Clark, public works commissioner of Toronto, Ont., is investigating a construction company's claim that it erred $630,000 on the low side in its winning $1.9 million bid for a Humber River sewer project.

Mr. Clark said Rayner-Atlas Construction Co. told him of the mistake after bids had been opened from six companies competing for construction of a tunnel from Weston to Lake Ontario on the Humber's west side.

The next lowest bid of slightly more than $3 million came from the Foundation Co. of Canada.

Mr. Clark said he is "satisfied" that the Rayner-Atlas firm had made an honest mistake. He also reported that the Foundation Co. "expressed willingness" to reduce its original bid by $300,000.

The area's Metro Executive Committee, after telling the works commissioner to investigate the claim of error, also ordered him to consult with the other companies who had made bids.

Mr. Clark said he was not sure that the Metro would benefit by calling for new bid tenders and estimated that a new low bid could come in as high as $2.9 million.

He also explained that the Rayner-Atlas concern had agreed to sign the contract at its original bid price if extras were included to bring the total price up to slightly less than $2.5 million.

The commissioner reported to the executive committee that he would be able to limit the profit of the company to a flat 10% by setting up strict regulations.

State Park Agency Wants $20 Million for Building

Michigan's Gov. G. Mennen Williams plans to launch a public education campaign aimed at obtaining $27 million to improve and enlarge the state's 59 parks. Of the total, $20 million would go directly to construction.

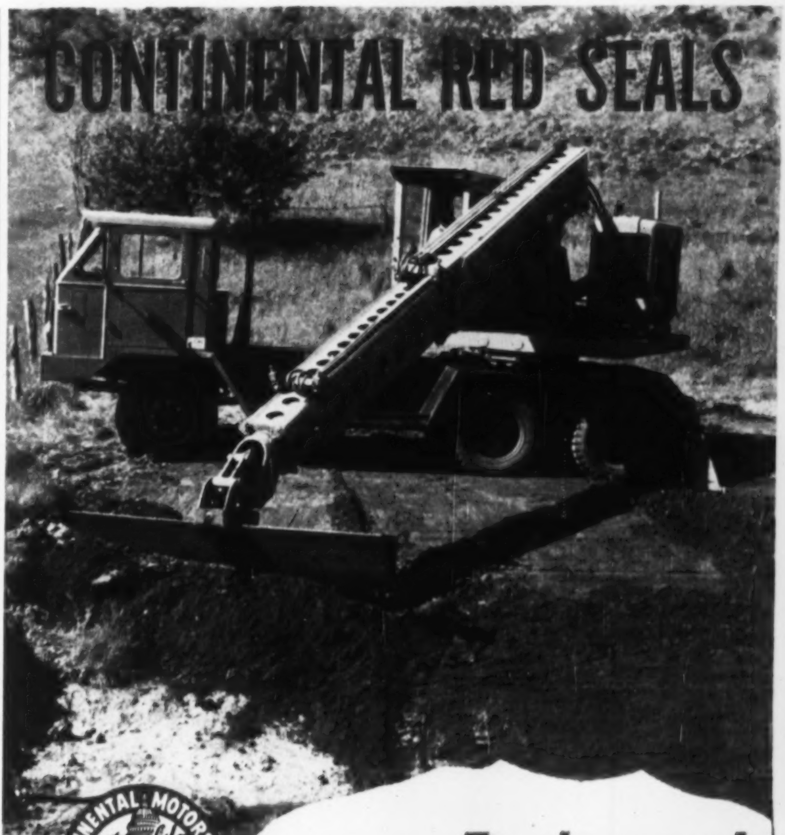
The Park Commission has told the governor that it needs $27 million during the next five years for capital expenditures and at least another $2.5 million annually for maintenance.

The commission would use $6 million to install sanitation facilities in all the parks and $14 million would pay for new buildings, roads and other major permanent improvements.

The remaining $7 million would be used to buy additional land.

(B & F continued on page 148)

CONTINENTAL RED SEALS



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Builders, Suppliers See Mutual Problems

The building industry, hurt by declining volume, urges its suppliers to get behind a merchandising drive

The nation's builders who almost annually move from crisis-to-crisis and who yearly manage to survive each one, got together last week with the building products manufacturers in San Francisco to hash over their current mutual headache—the big dip in building.

Occasion for the 400 person conclave was the first executive marketing conference of the National Housing Center, Washington, D. C. held in conjunction with the fall meeting of the National Association of Home Builders' board of directors. This was also tied to the organization's Pacific Regional Conference.

But while the group was pondering its future course, two federal government agencies released figures that helped to support some of the optimism that buoyed up the tenor of the conference.

The Labor Department reported that the seasonally adjusted annual rate for private housing starts tallied slightly over 1 million for August. The figure was up from the 980,000 rate of July but behind the 1.1 million annual rate for August 1956.

Actual starts of private housing in August climbed to 92,000 from the July figure of 90,200. And this figure was spiced with the news that public housing units slipped in August. However, the slackening of public housing activity served to bring the public and private totals in August down to 95,000 from July's figure of 96,000. Total August housing starts in 1956 were reported at 103,900.

• **Total thus far**—For the first eight months of this year, public and private housing units started totaled 700,500, an 11% drop below the comparable period of 1956 and the lowest for the period since 1949.

Labor's report was followed by that of the Federal Housing Administration which reported that applications in August for mortgage insurance on proposed new homes totaled nearly 22,300. This was 21% increase over the 18,400 level of July and the highest since the spring of 1956.

FHA said that for the year through August, it received mortgage insurance applications for 129,848 new homes as compared with 153,315 in the same period of last year.

While the agencies' reports were encouraging, however, the builders are convinced that they aren't getting their share of the consumer dollar at this time.

Richard G. Hughes, chairman of the Housing Center's board of trustees reminded all present of that fact and pointed out that builders and manufacturers are interdependent.

Urging that the two groups work together to obtain more sales, he conceded that "maybe some of us have been cocky, or at least there has been some misunderstanding. But starts are down; your business and our business is off."

Mr. Hughes said a "real partnership" should be established between the building products manufacturers and the builders as "we are your salesmen."

• **Help with money**—The conference brought out that the builders also expected more than lip service from the manufacturers if any partnership were to be really effective. So the producers were asked to put more money—as well as thought—into programs to help builders with merchandising. Among the suggestions were: Consumer advertising urging the public to buy more new homes equipped with the manufacturer's products; better point-of-sale displays for use in model houses; training courses for salesmen; and assistance with financing the sale of houses.

In addition to the merchandising aspects of the housing industry, the conference set up some technical and semi-technical targets at which to shoot. Among them were:

- Manufacture materials designed for the new house as well as existing homes, with new houses being the major market.
- Standardization of materials and equipment to reduce cost and produce greater efficiency.
- Develop automation for builders by supplying them with better tools and equipment.
- Work out a closer architect-builder relationship because genuinely new houses are needed to meet changing demands, desires and requirements.
- Work together to solve community facilities problems and other community roadblocks that are increasing costs of land and development. In some cases, these problems are believed headed toward a sector that could prove prohibitive.

• **The financial front**—But no matter which way the builders turned, they saw money as their problem. They could not and did not ignore the necessity of finding ways of financing that will be easier on them and the buyer. The builders, therefore, were urged to encourage house trade-in by arranging financing for owners of old houses so they can sell them and buy new ones.

They also asked that FHA be "strengthened and improved," because the agency must continue to set the mortgage pattern with low downpayments, low interest rates and long mortgage maturity terms.

In addition, they will strive to expand the activities of the Federal National Mortgage Assn. (Fannie Mae) in order that its secondary operations in the mortgage field can more effectively stabilize the housing market in periods of financial crisis noted this year and in 1953.

Also thrown out as food for thought was the idea of pushing for Congressional action to create an insurance fund that would insure 90% of the top 20% of loans. Such legislation would be created to back mortgage loans of savings and loan associations thus enabling such institutions to make 90% loans.

Nathaniel Rogg, economist for the association, predicted a hard-core volume of 1 million units a year for the next few years, although he said next year's housing market would probably be similar to that of this year.

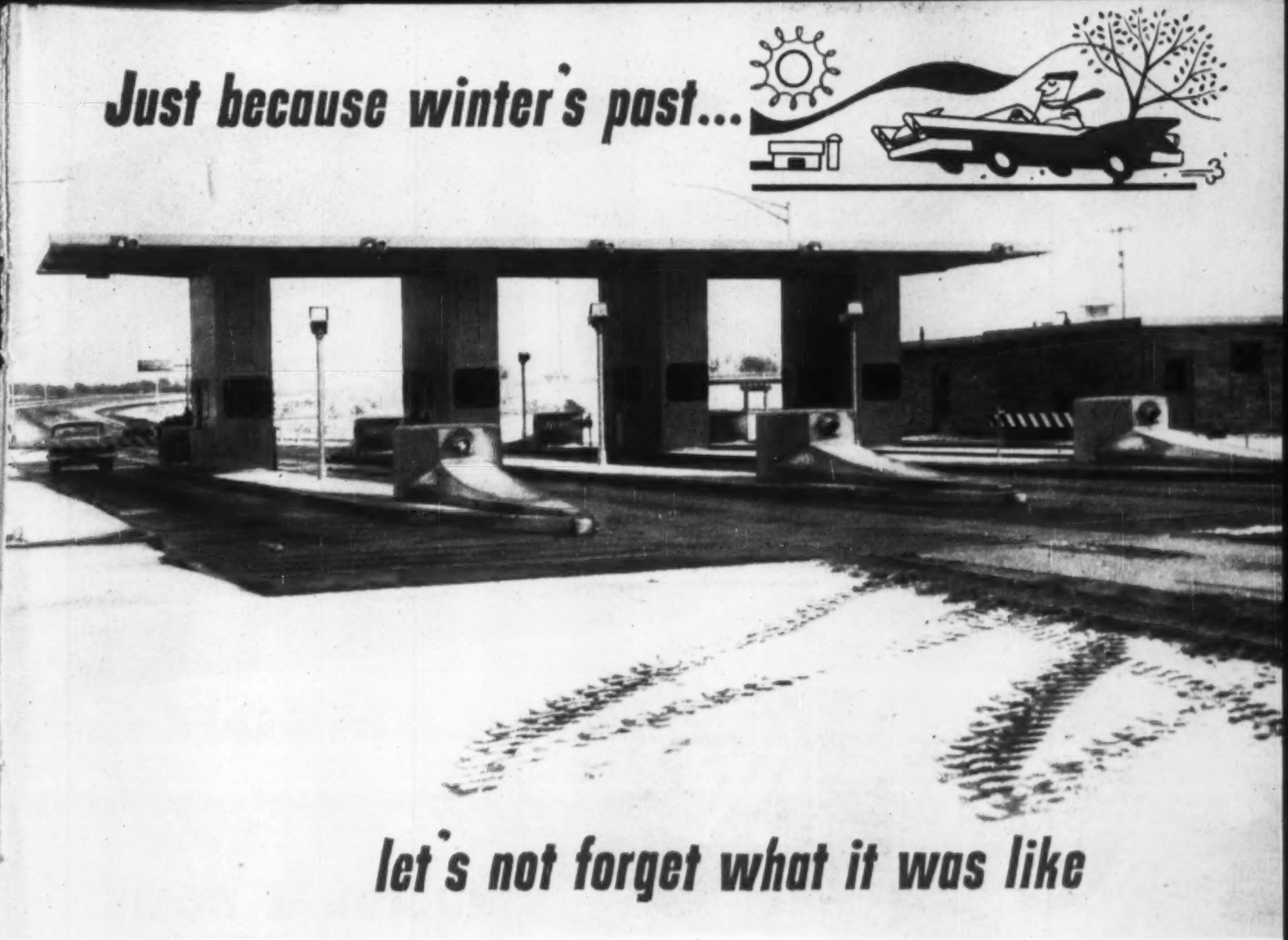
For the 1956-65 period, Mr. Rogg predicted a basic shelter requirement for the nation of 12 million to 12.5 million new houses, but he added that this number would not necessarily be sold.

Alabama Power Project To Cost $121 Million

The Federal Power Commission has issued a 50 year license to the Alabama Power Co. for a $121 million hydroelectric project on the Coosa River in Alabama and Georgia.

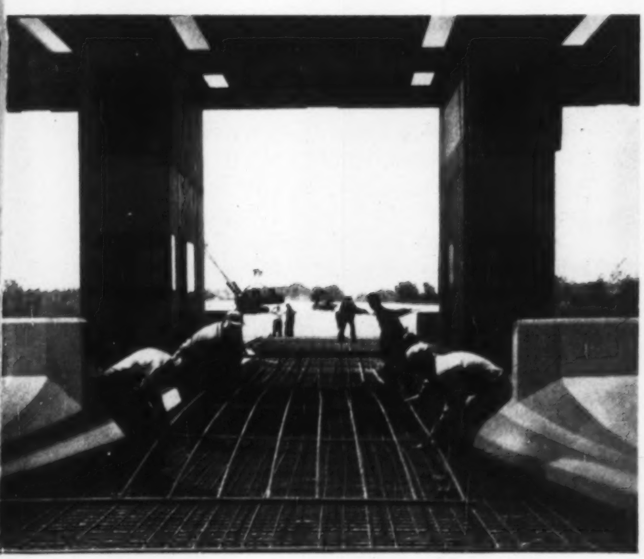
The project involves the building of four new dams and redeveloping an existing one. Initial capacity of the project will be 360,000 kw, including 81,000 kw already installed at the existing dam.

(B & F continued on page 151)



Just because winter's past...

let's not forget what it was like



This is a picture of an Indiana Toll Road plaza. It was taken last January, when the Country's roads and highways were coated with the slick, treacherous icing of winter. Yet, at this plaza the highway was clear and safe. Why? Because, under the pavement a snow melting system was in constant operation, keeping surface temperatures above freezing.

Over 157,000 feet of USS National Pipe was used for snow melting coils and tie-in lines in the various plaza areas of Indiana's new East-West highway—an innovation aimed at eliminating up to 90% of winter traffic hazards due to stopping and starting. It has been highly successful.

Now is the time for planning and building the snow melting systems for next winter, and the countless winters to come. And, when you make those plans, remember to include National Steel Pipe. It possesses the inherent qualities of smooth, uniform bending . . . sound, strong welding . . . and long service life—qualities that have consistently made USS National Pipe the largest selling pipe in the world.

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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

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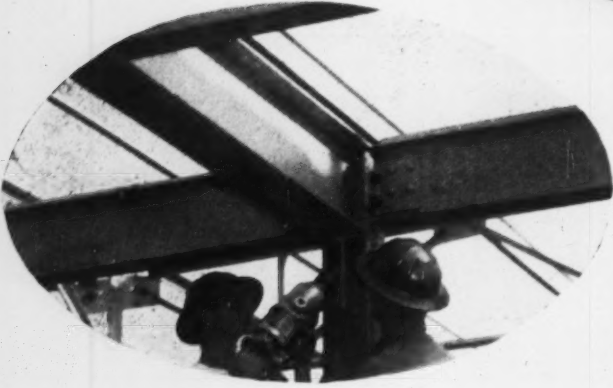

ON THE
BEAM
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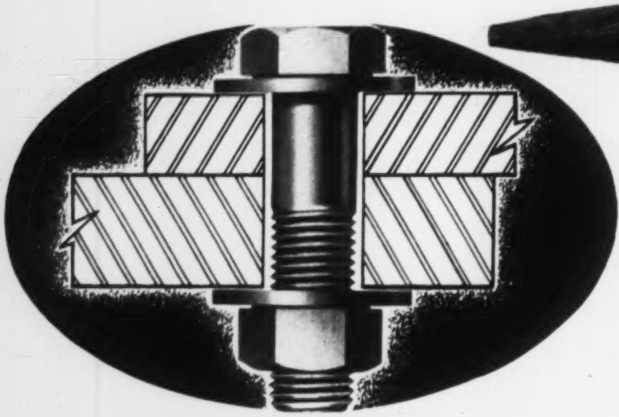

LAMSON

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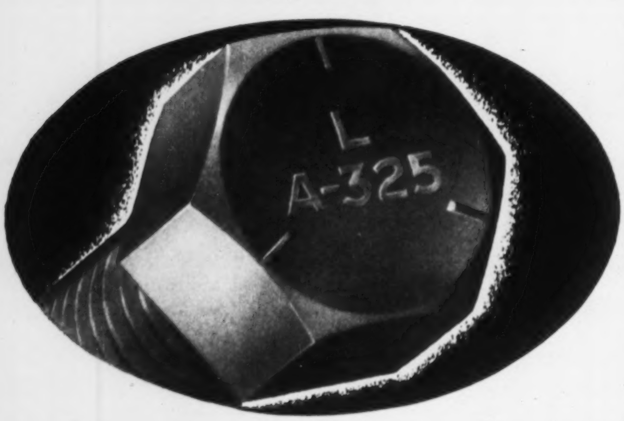
STRUCTURAL BOLTS

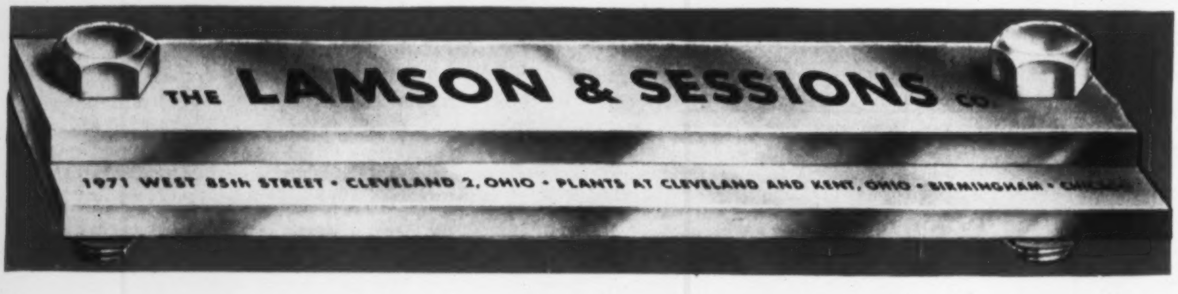


Remember this head for dependable performance

The importance of knowing the brand and source of High-Strength Structural Bolts cannot be over-emphasized. Assurance of quality, dependability and top performance is a *must* with bolts used in structural steel construction.

Lamson High-Strength Bolts are made from specially selected steel to meet the rigid A. S. T. M. specifications and fulfill the requirements of all building inspection codes.

The "L A-325" on the head is a symbol of reliability and your guide to the finest High-Strength Bolts money can buy. Look for it . . . and be sure of getting Lamson & Sessions proven quality backed by 90 years of fastener experience.


THE LAMSON & SESSIONS CO.
1971 WEST 85th STREET • CLEVELAND 2, OHIO • PLANTS AT CLEVELAND AND KENT, OHIO • BIRMINGHAM • CHICA

Unhappy Thoughts

Advisory group rejects tax increase suggestion from its own consultants

Virginia's Advisory Legislative Council ran counter to its own engineering consultants and brushed off a recommendation that motor fuel and some motor vehicle taxes be raised.

The council, established by the Virginia General Assembly to study major problems between legislative sessions, said "present revenue sources for the next few years will hold the highway construction backlog steady."

The consulting firm of Parsons, Brinckerhoff, Hall & Macdonald of New York City proposed that the state boost the gasoline tax from six to seven cents a gallon, the diesel motor fuel tax from eight to nine cents a gallon and the license fee by $2 a vehicle.

In making the recommendation, the consultants estimated that the present backlog of needed road construction now totals $635 million. They also said that Virginia should spend $2.1 billion for highway construction during the next 13 years. Based on the projection of present revenues, the engineers said the state would fall short of the required amount by $500 million.

Although turning its back on the tax boost proposal, the council conceded that eventually additional funds will have to be obtained.

Canada Acts to Support Home Building Industry

Low-cost housing in Canada received a $150 million boost recently when the government provided the Central Mortgage and Housing Corp. with that amount for new loans.

Housing starts in the first six months of 1957 dropped 23% below the 1956 figure because of a tightening in the mortgage money market. The new funds, are earmarked for low-cost housing loans.

They will be available to homeowners, builders, and rental investors in all parts of Canada through banks, insurance companies, and trust and loan companies.

The new funds will supplement existing mortgage lending programs of approved lending agencies. Loans will be made at the prevailing National Housing Act rate of 6%.

The new money brings to $250 million the total funds provided by the government for housing loans during the present year.

Construction Markets

Portland, Oregon: An On-the-Spot Report

Portland, Ore., architect, summarizing the area's construction outlook said, "There is a lot of construction work—at least there is a lot in the wind."

But whether the wind blows in contracts or just hot air will depend to a great extent on the condition of the financing market for both public and private projects. Homebuilders are on the sidelines now, watching the mortgage market ebb and hoping that soon it will flow. The apparent advantage of lower down payments for housing bought with mortgages insured by the Federal Housing Administration appears to have been counter-balanced by the control on discounts (ENR, Aug. 29).

Public construction advances, particularly sewerage and water projects, could be jeopardized by any further rise in the interest rates on municipal bonds.

One firm of consulting engineers, with three large sewerage system projects on its boards, said the bond market is the key to moving the systems off the plans and into the ground.

H. Loren Thompson, of the consulting engineering firm of Stevens & Thompson, said additional interest rate increases "could adversely affect all types of public construction next year." He doubted the ability of municipalities to pay 5½ to 6% on revenue bonds.

But one of Portland's larger architectural offices has seen fit to place more people on the payroll than at any time during the last five years. The work is there to keep the staff busy.

John Merrill, Jr., of Skidmore, Owings & Merrill, said some projects have been delayed because of the tight money market, but he added that developers are still moving ahead with plans and so far have not shelved major projects.

Mr. Merrill said much of the planning is in the office building field with emphasis placed on the remodeling of existing office structures. He said the remodeling urge is "springing up in all of the coast cities that have not enjoyed a big boom in the construction of new buildings."

One of the top jobs pending is a $6 million Sheraton Hotel to be constructed in the long-proposed Lloyd Center on the city's near east side, opposite the downtown area.

This job will move into the bid stage around the first of next month and will be the first new structure in the $30 million Lloyd Center.

In the face of a depressed condition of the state's major industry—lumber—Portland officials and businessmen remain optimistic, helped along by constant predictions that the metropolitan area will experience an upsurge in population. A recent population projection for the area placed it at 1.4 million by 1975, which would leave Seattle far behind.

With that cheerful thought in mind, David C. Duncan, president of the Portland Chamber of Commerce said, "The negative cycle we have experienced in both lumber and agriculture no longer throws us into an economic tailspin. The increasing diversity of the area is now the backbone of a fast maturing economy."

This placing of economic eggs in many baskets has brought encouragement and new thinking to the area, among them a proposal by Del E. Webb Construction Co. to construct a 14 story building for the county and city governments on a lease-purchase basis.

And it is in public works and buildings that the bid immediate demand rests.

By the end of the year, plans will be completed for an $8 million exposition and recreation center to be built by the city.

One contract has already been let for demolition of structures on the 21 acre site.

Highway work will also move into the city's construction picture. The Oregon State Highway Department is planning to bring the R. H. Baldock freeway between Portland and Salem into the center of the Portland. The Banfield freeway will also come into the city. Between these two jobs, the department expects to let $8.5 million in contracts by the end of this year.

Three major bridge projects have been started, one of them a $12 million Willamette River crossing into downtown Portland. A $1.5 million contract will be let this fall for the west approaches to another bridge.

FINGER-TIP CONTROL and ECONOMY OF OPERATION

ARE "*STAND-OUT*" FEATURES

IN OUR

MADSEN ASPHALT PLANT

...*says*

CAPITAL CITY ASPHALT COMPANY, INC.
Montgomery, Alabama

FAST, EASY OPERATION MEANS LESS OPERATOR FATIGUE

Weighing and mixing controls in the MADSEN Model 481 Asphalt Plant are conveniently located for finger-tip action. The eight switch levers shown above electrically energize the 4-way solenoid-operated air valves which open and close the various gates and the asphalt injection. Because air operation is simple and easy for the operator, it reduces his fatigue, thereby increasing his efficiency. And, air operation is fast and accurate which decreases time cycle from bin to truck.

▷ Owners of MADSEN Model 481 Asphalt Plants are quick to praise the fast-action, finger-tip control of the weighing and mixing operations. Capital City Asphalt Company, Inc. of Montgomery, Alabama, who own and operate the 4000-lb. MADSEN Model 481 Asphalt Plant shown above, rate this MADSEN advantage a most important factor in obtaining maximum daily production. After completing a contract calling for 25,000 tons of hot mix for city streets, this well-known contractor says *"our MADSEN Model 481 gives us a very good volume of production with a minimum of operating costs."*

The MADSEN Model 481 Asphalt Plant is big, oversize throughout with larger elevator, screen, bins, weighbox, mixer and drives. The 6000-lb. plant can easily handle 180 T.P.H. on a one-minute mixing cycle, with user claims nearing the 300 T.P.H. mark. The Model 481 is available in 4000-lb., 5000-lb. and 6000-lb. batch capacities. (If purchased as a 4000-lb. plant the Model 481 may be converted to a 5000-lb. or 6000-lb. plant with only minor modification costs.)

Combine the big MADSEN advantages of easier operation, greater economy of operation, bigger day-in and day-out production with long-range, in-built MADSEN versatility, and you can see why more and more successful asphalt producers are buying MADSEN. Why not get the complete MADSEN story today.

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Teamsters Face a Firm AFL-CIO

President Meany says teamsters must clean house at top if they want to retain a federation membership

AFL-CIO President George Meany last week made it reasonably clear that ouster of the teamsters union from the federation is a foregone conclusion if the union elects James Hoffa as president. At the same time, an effort to derail Mr. Hoffa's candidacy was begun by several teamster leaders and appears to be gaining momentum.

Speaking in New York City, Mr. Meany said that there is no room within the AFL-CIO for unions headed by officers publicly exposed for wrongdoing. He did not, however, specifically mention either the teamsters or Mr. Hoffa.

The teamsters union—largest of the AFL-CIO affiliates and a member of the federation's Building and Construction Trades Department—faces an involuntary spin-off from the AFL-CIO unless acquitted of the charge that it is dominated or controlled by corrupt influences. The charge was preferred by the federation following investigation of teamster affairs by the Senate Select Committee on Improper Activities in the Labor or Management Field.

(The Senate committee has charged teamster President Dave Beck with misuse of union funds, and union vice president and mid-western leader James Hoffa of promoting the interests of known racketeers. Mr. Beck is stepping down from the union presidency voluntarily, and Mr. Hoffa is the leading candidate for the office. A new president will be elected at the union's convention, which opens in Miami Beach, Fla., Sept. 30.)

Mr. Meany's statement is not the first of its kind but it is the first official indication that the teamsters union failed to purge itself of the AFL-CIO charge when it appeared in its own defense before the federation's Ethical Practices Committee Sept. 5. At that time, the union's Executive Board denied the corruption charge and took this position:

- Information on which the charge is based comes from sources not subject to the tests of cross examination. Some of it is hearsay.
- None of the allegations supporting the charge is "of such magnitude as to support a belief" that the union "as an entity" is dominated or controlled by corrupt influences.
- Each union official should be judged in "the light of his primary duty and responsibility to the union." (Teamster officials have consistently claimed that their primary responsibility is the achievement of better wages, hours and working conditions for union members.)
- The union plans to adopt at its forthcoming convention a new constitution designed to make the conduct of union affairs more democratic and more foolproof against corruption and abuse.
- The ultimate answer to the AFL-CIO charge will be made by the delegates to the convention.

Many observers have felt that the AFL-CIO will seek to avoid a showdown with the teamsters on the assumption it cannot afford to lose an affiliate that pays a four-cent monthly per capita tax on 1,349,000 members, or a union whose strategic jurisdiction yields economic power of a high potential. But so far the AFL-CIO has refused to compromise its principles. Earlier this month Mr. Meany assured the public that the AFL-CIO leadership would discharge "in letter and spirit" its obligation to keep the labor movement above reproach. "We can and we will expel from our ranks," he said, "organizations that are found by public investigatory bodies to be substantially influenced in the conduct of their affairs by corrupt elements or individuals. So far as we are concerned, there is not room in the labor movement for those who betray their trust, for those who embezzle union funds . . . for those who make common cause with gangsters and racketeers, for those whose shameful misdeeds serve to bring the entire trade union movement into disrepute."

Next official step in deciding the teamsters' fate is submission by the Ethical Practices Committee of its report to the AFL-CIO Executive Council. The council will consider the report at its Sept. 24 meeting in New York City.

Meanwhile, three teamster leaders, in personal appearances before the Western Conference of Teamsters' Executive Board last week, attempted to launch an anti-Hoffa drive. They were Thomas J. Haggerty of Chicago, Thomas L. Hickey of New York and Rep. John F. Shelby (D) of California. All are candidates for the union presidency. None received endorsement by the conference, which decided to leave the ultimate decision with its affiliates and their members.

But the AFL-CIO warning, however, seemed to be taking root. In New York City, a 4,000 member local gave its support over the weekend to Mr. Hickey. And the teamsters' powerful Chicago Joint Council is meeting this week to reconsider an earlier pledge to Mr. Hoffa.

(*Labor continued on page 154*)

CANDIDATES FOR TEAMSTER PRESIDENCY confer with the chairman of the union's Western Conference, Frank Brewster (second from right). From left: John Shelley, Thomas Haggerty, James Hoffa and (at right) Thomas Hickey.

AGC Committee Sees Tighter Controls

Officials urge reforms in use of union power, in collective bargaining and in the Davis-Bacon Act

Tighter curbs on the activities of organized labor were predicted last week by the Associated General Contractors of America, Inc.

The prediction was made by Frank J. Rooney of Miami, Fla., chairman of the AGC's labor committee at the mid-year meeting of the association's governing and advisory boards in Seattle, Wash.

In presenting the labor committee's report, which attracted major attention from the more than 500 delegates, Mr. Rooney said that the public's attitude toward labor has changed as a result of the investigation now being conducted by the Senate Select Committee on Improper Activities in the Labor or Management Field. "Whatever evolves from the hearings," Mr. Rooney declared, "it is hoped that specific remedial legislation will result. The force of public opinion developed through the hearings is even greater than that which existed at the time of the passage of the Taft-Hartley Act." (The resulting threat of more restrictive legislation is one of organized labor's greatest fears and is a significant factor in the AFL-CIO's determined effort to rid its ranks of corruption and to keep its name above reproach—see page 153.)

Mr. Rooney called upon "top officials of the AFL-CIO" to "exert greater effort to control the insatiable appetite of the local business agent for the perennial wage increase which causes inflation and devalues the dollar, thereby destroying labor's own purchasing power."

However, the AGC labor committee called attention to the fact that better understanding has developed in the past 15 years between the leaders of the building trades unions and employers. But Mr. Rooney said he believes improvements such as this in labor-management relations may be nullified "as a result of the strains on organized labor and the inability of sound leaders to develop responsibility for reasonable demands and actions and to stop misuse of the power and special privileges granted by the government."

Wage controls may result because of this lack of responsibility, declared Mr. Rooney.

(The possibility of such controls, including restrictions on industrial prices, has been raised frequently, but President Eisenhower has repeatedly denied any present intention or inclination to move in that direction.)

• **Specific recommendations**—Turning its attention to specific problems, the labor committee again urged the AGC to continue its efforts to get stronger legislation in the field of secondary boycotts and new legislation to eliminate the "no man's land" that now exists in jurisdiction over unfair labor practice cases. (Under present law, the National Labor Relations Board can handle only those cases that affect interstate commerce, but under the board's jurisdictional standards some cases cannot qualify for consideration. At the same time, the doctrine that a state can't act in a field covered by federal legislation means that such cases that don't qualify can't be taken to state courts.) As a result, contractors and labor groups have often found themselves victims of an unfair labor practice without satisfactory legal relief.

At the meeting, the AGC labor committee received complaints that AGC chapters are finding it increasingly difficult to demand that they be recognized as the sole bargaining agent for all general contractors, and also received reports on practices of a restrictive nature that have crept into collective bargaining agreements in recent years. The committee called upon local chapters and members to resist acceptance of such provisions and their inclusion in labor contracts.

A resolution was received from the AGC's Carolinas' branch calling for immediate repeal of the Davis-Bacon Act, which requires contractors to pay prevailing wages on federal construction projects. Although the resolution was turned down, the committee passed a resolution asking Congress to study the present administration of the act. It expressed the hope that as a result of such a study the law would be made subject to judicial review. (At the present time, prevailing wage determinations made by the Secretary of Labor are subject to review within the Labor Department but not by the courts.) The committee's criticism of the prevailing wage system included disregard of wage-payment information on technicalities, use of building rates in determinations affecting heavy and highway construction, and unreasonable delay in the correction of erroneous determinations.

At the same time, the committee recommended support of legislation that would prevent diversion of funds intended for administration of the Davis-Bacon Act.

Secondary Boycott

Picket signs ruled not an inducement to a strike

A National Labor Relations Board trial examiner has ruled that the existence of an illegal secondary boycott at a common construction site is not necessarily established by the fact that employees of subcontractors honored picket lines formed by employees of the general contractor.

The ruling, which stemmed from a representation dispute between Local 789 of the laborers union and Doyle & Russell, Richmond, Va., contractors, dismissed an unfair labor practice complaint issued against the union.

Underscoring the complexities which the secondary boycott provisions of the Taft-Hartley Act pose for the construction industry, the main issue before the trial examiner was whether the laborers, through the picket signs they used, induced the other trades to strike. (Under the law, a union can't be found guilty of violating the secondary boycott provisions of the law in this type of case unless it induced the other trades to strike.)

Signs used by the laborers' pickets specifically described the dispute as one between Doyle & Russell and Local 789. "To employees of subcontractors on this project, whose failure to work gave rise to this proceeding," the trial examiner said, "the text of neither picket sign . . . could have appeared ambiguous, or as a direct or indirect appeal to them not to work."

In refusing to construe the signs as an inducement to strike, the trial examiner stated that employees of neutral employers have the legal privilege of not crossing picket lines and that the privilege can be exercised without an appeal to honor the picket lines. "And certainly it cannot be persuasively argued," he continued, "that because an employee of a secondary employer honored a picket line of a primary dispute that the picket sign must be held, per se, to be violative of the Act. Such an interpretation of the Act would proscribe all picketing, under any circumstances, and particularly in the construction industry."

U.S. Reports Wage Hikes Are Bigger Than Year Ago

The United States Departments of Labor and Commerce estimate that the average rate for union building trades workers was $3.20 as of July 1. This represents an increase of 16 cents, or 5.3%, over the average that prevailed a year ago.

Noting that the increase for the second quarter of 1957 was larger and more widespread than for the similar 1956 period, the departments have announced that wage rates in the building trades during the quarter advanced, on the average, 3.4% for 70% of the unionized workers covered in a 100-city survey.

A fourth of the wage boosts were for 10 cents an hour, a fifth for 15 cents, and another fourth for more than 15 cents.

Since 1956, according to the government report, average gains since 1956 have ranged from 12.5 cents an hour for plasterers to nearly 17 cents for plumbers.

Contractor Gets a Hand From Labor After Fire

In the little town of Benton, Ky., not far from Paducah, members of organized labor last week gave a dramatic illustration of what good labor relations can accomplish.

More than 150 union workers lent their employer, Miller-Johnson Co., a helping hand in cleaning up after a fire that destroyed the employer's building and much of its equipment. Working without pay, the men spent a day pulling down weakened walls and carting away the rubbish.

Miller-Johnson, a Benton plumbing, heating and air conditioning contractor that also engages in general construction work, is a member of Associated General Contractors of Western Kentucky.

Labor Briefs . . .

- **Picketing challenged**—Virginia Engineering Co., Newport News, Va., has filed secondary boycott charges against four non-building trades unions. Unions are on strike against the owner for whom Virginia Engineering is doing construction work in Louisville, Ky.
- **Right-to-work**—The Indiana State Federation of Labor has launched a program to kill Indiana's right-to-work law through judicial or legislative action. Heading the committee spearheading the drive is building tradesman Earl Whitehurst, member of the International Union of Operating Engineers.

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY.

Bids: October 24, 1957

Advertisement Notice to Contractors Construction of Sludge Digestion Units Hiawatha Treatment Plant Metropolitan Syracuse Treatment Plant District Onondaga County, New York

Separate sealed bids for the construction of the Sludge Digestion Units Metropolitan Syracuse Treatment Plant District, will be received for the Onondaga Public Works Commission by the County Purchasing Agent, County Office Building, 600 South State Street, Syracuse, New York, until 2:00 P.M., Eastern Daylight Saving Time, October 24, 1957, and there at said office publicly opened and read aloud. Bids will be received for:

Contract No. 2—General Construction
Contract No. 3—Heating and Ventilating
Contract No. 4—Electrical Work
Contract No. 5—Plumbing

These Contracts are for the first major stage of construction of a 50 mgd Chemical Precipitation Sewage Treatment Plant, and provide for the construction of three primary sludge digestion tanks and one secondary sludge digestion tank, each 100 feet in diameter and approximately 30 feet high; a three-story reinforced concrete frame central control house of approximately 80,000 cubic feet; and all necessary equipment and facilities pertinent thereto. All four tanks will be of prestressed concrete construction insulated and faced with tile. Alternate bids will be invited on fixed concrete or floating covers for the primary tanks, and on related process equipment and piping. The secondary tank will be equipped with a floating gas dome. All structures will be supported on raft foundations.

Bidders will be required to bid on all items comprising the Base Bid for the 4-tanks and control house and on all items comprising a Reduced Scope Bid for 2-tanks and control house. The Owner reserves the right to elect, after receipt of bids, to award contracts for the construction of either the work covered in the Base Bid or the work covered in the Reduced Scope Bid.

Copies of the Information for Bidders and all Contract Documents, including separately bound Drawings, may be obtained only from the Onondaga County Purchasing Agent upon deposit of fifty dollars ($50.00) per set. Any bidder submitting a sealed bid, upon returning the drawings in good condition within thirty days (30) days of the award of the Contract or rejection of the bid, will be refunded the full amount of his deposit. Any non-bidder, upon similarly returning full sets of Contract Documents and plans, will be refunded forty dollars ($40.00) per set.

Copies of the above described Contract Documents may be examined at no expense at the office of the Purchasing Agent; at the office of the Onondaga Public Works Commission, County Office Building, 600 South State Street, Syracuse 2, New York; at the office of O'Brien & Gere, Consulting Engineers, 400 East Genesee Street, Syracuse 2, New York; or at the office of the Syracuse Builders Exchange, 1045 James Street, Syracuse 3, New York.

The right is reserved to waive any informalities in the bids and to reject any or all bids.

ONONDAGA COUNTY, NEW YORK
By: Robert W. Sollinger,
County Purchasing Agent
Dated: September 12, 1957

Bids: September 26, 1957.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, sealed proposals will be received until ten-thirty o'clock A. M., advanced standard time, which is nine-thirty o'clock A. M., eastern standard time, on the 26th day of September 1957, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany 1, N. Y.

County	Contract No.	Name
Essex	Chap. 310, Laws 1957(3)	Little Whiteface Ski Center (Trails)

Miles	Type	Deposit	Estimated Cost of Work
1.88	Clearing and Grubbing, Seeding, Drainage and Grading	$2,500 Plans $10	$14,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Continued on following page

OFFICIAL PROPOSAL

RATE: $2.10 per line (or fraction) per insertion

CLOSING DATE: 10:30 a.m. Friday for issue out following Thursday

SEND COPY: Official Proposal Division, Class. Adv., P. O. Box 12, N. Y. 36, N. Y.

Bids: October 10, 1957.

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A. M., eastern standard time, on the 10th day of October 1957, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 3, Wm. Robinson, District Engineer, 333 E. Washington St., Syracuse, N. Y.						
Onondaga	PSC 17627	Elimination of Grade Crossing of the N.Y.C.R.R. with Main St., Village of Minoa and Synder Rd., Town of Manlius	0.92 (0.44) (Acc.)	9" Cem. Conc. Pavt. 24', 40' Wide=0.86 mi. Asph. Conc.=0.37 mi. Misc. Work=0.13 mi. RR Sep. Comp. I-Beam 185' Br. Prestressed Conc. 118.5' Extend Exist. Pedestrian Overpass	$55,000 Plans $15	$1,002,000
DISTRICT No. 5, E. G. H. Youngmans, District Engineer, 65 Court St., Buffalo 2, N. Y.						
Chautauqua (Rte. 17)	FARC 57-53	Falconer Village, S.H. 5067 Falconer-Kennedy, S.H. 698 Proj. F-449(7)	1.21	9" Cem. Conc. Pavt. 48' Var Wide=1.01 mi. Asph. Conc.=0.19 mi. Misc. Work=0.01 mi. Comp. I-Beam Br. 160'	$50,000 Plans $15	$878,000
Erie (Rte. 5)	FAC 57-13 FAC 57-14	City of Lackawanna: Arterial Route, Fuhrmann Blvd-Hamburg Tpke. Viaduct (Ridge Rd.-North City Line) Cont. 4 City of Buffalo: Arterial Route, Fuhrmann Blvd.-Hamburg Tpke. Viaduct (South City Line-Tifft St.) Cont. 4. Proj. U-750(12)	1.10 (2.68) (Acc.)	Viaduct Substructure=0.56 mi. Asph. Conc. Ty. 2A=1.41 mi. Grading with Gravel Surface=1.27 mi. Grading with Stone or Slag Surface=0.22 Misc. Work=0.32 mi.	$215,000 Plans $50	$3,894,000
Erie	C 57-17	City of Buffalo: Fuhrmann Blvd. High Level Bridge	.1.20	Beam Type Curb Barrier=1.10 mi. Misc. Work=0.10 mi.	$3,900 Plans $10	$57,000
Niagara	FAC 57-15	City of Niagara Falls: Arterial Route Walnut Ave. & Ferry Ave. (Main St. to Pine Ave. and Packard Rd.) Proj. U-500(9)	4.35	Asph Conc.=4.22 mi. Misc. Work=0.13 mi. Pre-Stressed Conc. Br. 76'	$80,000 Plans $25	$1,435,000
DISTRICT No. 7, R. W. Sweet, District Engineer, 444 Van Duzee St., Watertown, N.Y.						
St. Lawrence, N.Y. and Grenville, Ontario., Canada	OBA 57-3	Ogdensburg Bridge, Cont. No. 3	....	Superstructure for 2150' Suspension Bridge	$350,000 Plans $15	$6,000,000
St. Lawrence (Rte. 37)	FAC 57-16 FASH 57-19 FARC 57-171	City of Ogdensburg: Rte. 37, Arterial; City of Ogdensburg: Rte. 37 Connection: Ogdensburg-Morristown, Pt. 1, S.H. 878; Ogdensburg-Waddington, Pt. 1, S.H. 5497 and Ogdensburg-Waddington, S.H. 9357 Proj. U-UG-650(7)	6.87	Asph. Conc.=6.87 mi. 1 RR Sep. Comp. I-Beam 544.5' 1 RR Sep. Cont. I-Beam 172.28' 1 Hwy. Sep. Comp. I-Beam 151.66' 1 R.C. Open Box Bridge 23.4'	$195,000 Plans $100	$3,570,000
DISTRICT No. 8, K. G. Rauer, District Engineer, Pleasant Velley Road, Poughkeepsie, N. Y:						
Columbia., Putnam, Orange & Rockland	R.C. 57-169	Br. No. 1, S.H. 1933; Br. No. B-1, S.H. 1221; Br. No. 1, S.H. 153; Br. No. B-2, S.H. 153; Br. No. B-1, S.H. 449; Br. No. B-1, S.H. 5297; and Br. No. 1, S.H. 8049A	....	Cleaning & Painting 7 Bridges	$500 Plans $10	$10,000
Rockland & Westchester (Rte. 6)	BMB 57-1	Bear Mountain Bridge	0.47	Asph. Conc. Ty. 4A=0.45 mi. Cem. Conc. Pavt.=0.02 mi.	$5,000 Plans in Proposal $5	$84,000
Westchester	SMRP 57-1	Saw Mill River Parkway (Mt. Kisco-Katonah, Pt. 2)	2.03	Roadside Development	$4,000 Plans $10	$69,000
DISTRICT No. 10, M. E. Goul, District Engineer, 325 W. Main St., Babylon, L. I., N. Y.						
Bronx	FIBE 57-3	Bruckner Expressway (Sect. 1, Cont. 2) Proj. I-U-1086(6)	1.03 (1.14) (Acc.)	9" Cem. Conc. Pavt. (Ramp)=0.05 mi. Cem. Conc. Deck Traffic Surface (Viaduct)=1.01 mi. Sheet Asph. Pavt. & Misc. Work=1.11 mi. 76 Span Comp. Girder & I-Beam Viaduct 5330.1'	$900,000 Plans $100	$16,340,000
Nassau & Suffolk (Rtes. 24, 25, 25A, 27)	RC 57-170	Various Highways in District 10 as Follows: S.H. 545, 9020, 1048A, 1274, 1883, 8181, 8229 & S.H. 52-3; S.H. 52-12	14.64	Landscaping	$3,500 Plans $10	$61,000
Nassau & Suffolk	SSP 57-1	Southern State Parkway (Cont. 14)	4.83	Furnishing & Erecting Aluminum Chain Link Fencing	$6,200 Plans $10	$113,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

Re: O.B.A. 57-3, St. Lawrence County, N. Y., and Grenville, Ontario, Canada: Maps, plans, specifications and proposals may be seen and obtained at the offices of Dr. P. L. Pratley, 909 Drummond Building, Montreal, Canada, and at Modjeska and Masters, Forster at 6th Street, Harrisburg, Pa.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: October 17, 1957

Power Authority of the State of New York Niagara Power Project

ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND DELIVERY
OF
37,500 HP/25,000 KVA MOTOR/
GENERATORS FOR
TUSCARORA POWER PLANT
SPECIFICATIONS NO. PA-N-25001
NIAGARA CONTRACT NO. NP2

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery thereof f.o.b. Model City, New York of 37,500 HP/25,000 KVA Motor/Generators for the Tuscarora Power Plant in Lewiston, Niagara County, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 17th day of October, 1957, at the Authority's Office, 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

Bids will be received for 12 or 6 motor/generators and associated equipment in accordance with the bidding schedules.

Delivery of generator parts will be required beginning on or before August 1, 1959.

Bids will not be restricted to American manufacturers.

Plans, Specifications and Proposal Forms for the work, may be obtained from the Power Authority of the State of New York, at 18th Floor, The Coliseum Tower, 10 Columbus Circle, New York 19, New York upon application and prepayment of a fee of Ten ($10.00) dollars per initial set of contract documents, and Five ($5.00) dollars per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal Forms for the work will be on file in the Authority's Office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 20 percent of the maximum price bid for any bid schedule.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

PA-N-25001

OFFICIAL PROPOSALS

Bids: October 1, 1957

Contract NA-220.013

THE PORT OF NEW YORK AUTHORITY
NEWARK AIRPORT
TAXIWAY "S" CONNECTION

Sealed proposals for the construction of a connection to Taxiway "S" at Newark Airpart will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, October 1, 1957, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, September 19, 1957

Bids: October 15, 1957

Contract NYA-650.050

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
OPERATIONS CARGO BUILDING
HEATING AND AIR CONDITIONING

Sealed proposals for installing an air-conditioning system and modifying the heating system in the Operations Cargo Building at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, October 15, 1957, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, September 19, 1957

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4967) will be received at Denver, Colorado, until October 31, 1957, for furnishing three (3) motor-driven, horizontal, centrifugal-type, 37 cfs, 275 ft. head pumping units; and two (2) motor-driven, horizontal, centrifugal-type, 17.5 cfs, 119 ft. head pumping units for Radar Pumping Plant, Columbia Basin Project, Washington. Delivery is desired within 330 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: September 30, 1957.

For
Construction of Operators' Housing on Barnhart Island
Park Superintendent's Residence, Massena Town Beach
and
Information Center Near Massena St. Lawrence County, New York

POWER AUTHORITY OF THE STATE OF NEW YORK
ADVERTISEMENT FOR PROPOSALS
SPECIFICATIONS NO. PA-5-11027
ST. LAWRENCE CONTRACT NO. SP1

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the construction of Operators' housing on Barnhart Island, Park Superintendent's residence, Massena Town Beach and Information Center, near Massena, St. Lawrence County, New York until 10:30 A.M. Eastern Daylight Saving Time on the 30th day of September at the Coliseum Tower, 18th Floor, 10 Columbus Circle, New York 19, New York, at which time and place proposals will be publicly opened and read aloud.

The principal work consists of the construction of seven (7) houses, beach facilities consisting of bathhouse and refreshment stand, and an information building at the entrance of the St. Lawrence Project together with accessory water, sewerage and electrical power facilities, roads, walks and driveways.

All work shall be completed on or before July 1, 1958.

Plans, Specifications and Proposal Forms for the work may be obtained from the Power Authority of the State of New York, at the Coliseum Tower, 18th Floor, 10 Columbus Circle, New York 19, New York, upon application and prepayment of a fee of Twenty-five ($25.00) dollars per initial set and Ten ($10.00) dollars per set for additional sets, no part of which will be refunded. Plans, Specifications and Proposal forms for the work will be on file in the Authority's office, and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and may be inspected by prospective bidders during office hours.

Bids must be made in duplicate in accordance with instructions contained in the information for Bidders. Guarantee will be required with each bid in an amount not less than 20 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

U. S. Government

United States Department of Commerce, Bureau of Public Roads, September 12, 1957. SEALED BIDS will be received at the office of the Inter-American Highway Office, Bureau of Public Roads, Room 6029, General Services Building, Washington 25, D. C., until 2:00 p.m., e.d.t., October 15, 1957, for construction of Rama Road Project R-3B in the Republic of Nicaragua. The project begins at the Espabel River about 34 miles east of Santo Tomas and extends easterly toward Rama for approximately 15 miles. Bidders will be limited to United States or Nicaragua firms with a satisfactory record of performance on highway construction in the United States of America or in the Republic of Nicaragua. The approximate quantities of the major items of work are: 95 Hectares Clearing and Grubbing 942,000 cubic meters Unclassified Excavation, 76,800 cubic meters Special Subbase, 2000 cubic yards Cement Rubble Masonry in Headwalls and Retaining Walls, 8,200 linear feet Nestable Bituminous Coated Corrugated Metal Culvert Pipe (from 24" to 72"), 1,400 linear feet Bituminous Coated Structural Plate Pipe (from 84" to 144"). Special conditions of work performed by U. S. Government in foreign areas apply as well as local laws. Plans, Specifications and Proposal Forms are available upon request at the address given above, or at the Inter-American Highway District Office, Bureau of Public Roads, 203 Carlos Palazio Bldg. Calle 5a, Managua, Nicaragua. C. D. Curtiss, Commissioner.

OFFICIAL PROPOSALS

Bids: October 3, 1957

New Jersey Turnpike Authority

ADVERTISEMENT FOR PROPOSALS
CONTRACT NO. R-11

Proposals are invited for Contract No. R-11, which involves the construction of approximately 12,500 linear feet of reinforced concrete barrier, and other incidental work, in the median of the Hackensack River Bridge near Laurel Hill in Hudson County and of the Passaic River Bridge near the City of Newark in Essex and Hudson Counties, which bridges form parts of the New Jersey Turnpike.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 o'clock, Eastern Daylight Saving Time, on the morning of October 3, 1957, at which time and place said proposals will be publicly opened and read.

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours on or after September 13, 1957, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 99 Church Street, New York 7, New York. Contract documents will be furnished upon payment of Ten Dollars ($10.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Joseph Morecraft, Jr. Chairman
September 10, 1957

Bids: September 26, 1957

New Jersey Turnpike Authority

RE-ADVERTISEMENT FOR PROPOSALS
CONTRACT NO. R-7

Proposals are invited for Contract No. R-7 which involves the repainting of the superstructure steelwork on the Hackensack River Bridge near Laurel Hill in Hudson County, and the Passaic River Bridge near the City of Newark in Essex and Hudson Counties, which bridges form parts of the New Jersey Turnpike.

Repainting shall consist of the application of one (1) finish coat of paint to the surfaces of all steel work in addition to initial cleaning and spot-painting in areas where the original coat or coats of paint are not in satisfactory condition. The approximate tonnage of superstructure steelwork to be repainted on the Hackensack River Bridge is 15,850 tons. The approximate tonnage of superstructure steelwork to be repainted on the Passaic River Bridge is 21,000 tons.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 o'clock Eastern Daylight Saving Time, on the morning of September 26, 1957, at which time and place said proposals will be publicly opened and read.

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours on or after September 11, 1957, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 99 Church St., New York 7, New York. Contract documents will be furnished upon payment of Five Dollars ($5.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Joseph Morecraft, Jr. Chairman
September 10, 1957

Bids: October 15, 1957

Contract PN-420.006

THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
BUILDINGS NOS. 191, 192, 193 and 194
PAVING AND UTILITIES

Sealed proposals for the construction of pavement and utilities for Buildings Nos. 191, 192, 193 and 194 at Port Newark, New Jersey, will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, October 15, 1957, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, September 19, 1937

Bids: October 8, 1957

Contract PN-420.003

THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
BUILDINGS NOS. 191, 192, 193 & 194
FOUNDATIONS

Sealed proposals for the furnishing and installation of wood pile and concrete foundations for Buildings Nos. 191, 192, 193 and 194 at Port Newark, New Jersey, will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eight Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, October 8, 1957, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, September 19, 1957

Bids: October 30, 1957

City of Binghamton Water Filtration Project

GENERAL CONSTRUCTION — CONTRACT I
PLUMBING — CONTRACT II
HEATING & VENTILATING — CONTRACT III
ELECTRICAL — CONTRACT IV

NOTICE TO BIDDERS

1. Sealed proposals for performing all work in connection with the General Construction, Plumbing, Heating & Ventilating, and Electrical work, Contracts I, II, III and IV, respectively, are hereby invited and will be received by the Board of Contract and Supply until 10:30 A. M. o'clock, Eastern Standard Time, on October 30, 1957 in the Council Chambers, City Hall, Binghamton New York and there publicly opened and read immediately thereafter. Contractors may submit proposals for any one or more contracts.
2. The work will consist of providing all labor, materials, equipment and incidentals and performing all operations required for the construction, complete and ready for municipal operation, of the Water Filtration Project including all General Construction, Plumbing, Heating & Ventilating, and Electrical Work.
3. Drawings, specifications, bidding and contract documents may be examined at the offices of the Consulting Engineers, Leonard S. Wegman Co., Grand Central Terminal Building, New York 17, N. Y. and Alexander Potter Associates, 50 Church Street, New York 7, N. Y., or at the office of the City Engineer at City Hall and obtained from the latter at a deposit of $75.00 per set. Full refund will be made to actual Bidders for return of one set in good condition and a 50% refund for return of each additional set in good condition returned within two weeks after closing date for receipt of bids. Single additional copies of any one drawing may be obtained upon payment of one (1) dollar per print.
4. Each bid must be accompanied by a Bid Security in the form of an Acceptable Bidder's Bond, or a certified check payable at sight to the Treasurer of the City of Binghamton in an amount not less than Five Per Cent (5%) of the amount of the total bid. Such Bid Security will be returned to all except the three lowest formal Bidders within five (5) days after the formal opening of bids, and the remaining Bid Securities will be returned within two (2) days after the Owner and the accepted Bidder have executed the contract, or if no contract has been executed, within thirty (30) days after the date of opening of bids, upon demand of Bidder at any time thereafter, so long as he has not been notified of acceptance of his bid. If the Bidder to whom the contract is awarded does not execute the contract and furnish the required bond within fifteen (15) days after receipt of notice of award the aforesaid Bid Security shall be paid to the City Treasurer as liquidated damages.
5. The Owner reserves the right to reject any or all bids, to waive any informality in bids received and to accept that bid which in its judgment best serves the interests of the City.

BOARD OF CONTRACT AND SUPPLY
CITY OF BINGHAMTON, N. Y.
By: William Chuma, Secretary
Dated: September 12, 1957.

Engineering News-Record

Reaches Your Local Contractors

Its distribution among the contractors of any one state is in proportion to the number of contractors situated in that state. The Official Proposal Columns of *Engineering News-Record* offer precisely the same efficient service to municipalities, counties, state and federal departments in every section of the United States.

Bids: October 9, 1957

Construction of Sanitary Sewers

Sealed bids will be received until 11:00 A.M., EST, on October 9, 1957, in the office of the City Commission of Fort Lauderdale, Florida, for the construction of sanitary sewers in Area "D" consisting of approximately 28,500 linear feet of gravity sewers, 27,000 linear feet of air and force mains, 5 pneumatic ejector lift stations and appurtenances. This contract to be known as "Contract B", Improvement 1005.

Bidding blanks may be obtained from the office of the City Engineer. Plans, specifications, and contract documents are on file in the office of the City Engineer.

A deposit of $40.00 for plans and specifications, and of $25.00 for each additional set of plans or specifications, will be required. All deposits for plans and specifications will be refunded upon their return in good condition within 10 days of the opening of bids.

A certified check, cashier's check or bank officer's check, for 2% of the total amount of the bid, made payable to City of Fort Lauderdale, Florida, shall accompany each proposal as evidence of good faith and responsibility of the bidder. This check shall be retained by the payee as liquidated damages should the bidder refuse or fail to enter into a contract with the payee for the execution of the work embraced in the proposal, in the event the proposal of the bidder is accepted.

The City Commission reserves the right to reject any or all bids.

W. J. Veeder
City Manager

EMPLOYMENT OPPORTUNITIES

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Gunite Superintendent—Wanted Immediately. Middle Atlantic States. State age, experience, availability, salary desired. P-4640, Engineering News-Record.

Engineer-Gunite, wanted immediately, must know estimating, take complete charge of all gunite operations. Executive position ultimately available. P-5355, Engineering News-Record.

Beginning Civil Engineer—Recent graduate. Mount Clemens, Michigan. Near Lake St. Clair. 20 miles Northeast of Detroit. Annual salary $5,122-$5,902. P-5509, Engineering News-Record.

Engineers for municipal and industrial water supply, sewerage and treatment projects. Opportunities for permanent connection with long established firm of consulting engineers in mid-west. Both E.I.T.'s and engineers considered. Full information and references in first letter requested. P-5889, Engineering News-Record.

Inspectors—Concrete, Soils & Asphalt. Field, Lab., & Plant. Also Material Engineer & Party Chiefs. Overseas Airbase. Mild Climate. P-6033, Engineering News-Record.

Excellent opportunity with small Engineering Firm in Middle West for Graduate Engineer capable of doing Structural Design, with or without experience. Send age, resume of education and experience, also references and salary expected, time available. P-6000, Engineering News-Record.

Assistant Professor in Civil Engineering for courses in mechanics and structures. Opportunity for research and summer work. Also opening for an instructor. Location Vermont. P-6082, Engineering News-Record.

Wanted by New Mexico General Contractor! Experienced estimator capable of eventually assuming Chief Estimator's duties. College Education preferred but not required. P-6071, Engineering News-Record.

(Continued on the following page)

EMPLOYMENT OPPORTUNITIES

—RATES—

DISPLAYED

The advertising rate is $31.80 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

NATIONAL COVERAGE

UNDISPLAYED

$2.10 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take ½ of above rate.

Box Numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW ADS and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD
P. O. Box 12, N. Y. 36. October 3rd issue closes September 23rd

POSITIONS VACANT

(Continued from preceding page)

Wanted—Engineer experienced in design of Water Filtration Plants. State experience, education, salary requirements and when can report. P-6054, Engineering News-Record.

Wanted Cost Engr., Supt., age 25 to 35 for permanent position with small fast growing Constr. Co. Gulf Coast area. Experience in heavy constr. essential. Send resume, ref. & salary required. P-6078, Engineering News-Record.

Established heavy contractor, water mains, sewers, treatment plants in New York State, has opening for alert younger engineer with proven background in field and office, for responsible charge of take off, purchasing, expediting, liaison etc. in main office. In return for interest, sound experience, performance, hard work & hustle we offer only well compensated opportunity to advance with growing organization. P-5918, Engineering News-Record.

Resident Engineer Inspector with experience on disposal plant construction. Write direct to Hill & Hill Engineers, 8 Gibson Street, North East, Pennsylvania.

Stress Analyst for pre-designed heavy steel structures, marine application. Immediate requirement. Opportunity to join staff of a major firm engaged in engineering and manufacturing of heavy steel structures. Background must include responsible experience in stress analysis of heavy steel structures. Experience with welded, tubular steel construction helpful. Heavy background and knowledge in submarine and wind forces desirable. Send resume of experience, including previous projects, personal data and salary requirement in first letter. Full Fringe Benefits. Location, South. Our employees are aware of this ad. All replies acknowledge and treated confidentially. P-6155, Engineering News-Record.

Building Estimator Wanted. Long established Contractor doing quality construction in Florida resort city has opening for well qualified Estimator. Work includes estimating, purchase awards, and architectural and structural office detail in support of varied small work and job up to $500,000.00. Salary $140.00 per week. Excellent opportunity for right man. Forward full information to P-6161, Engineering News-Record.

Civil Engineers, bridge designers, draftsmen, C.E. grads for consulting Eng's office. Steven Antonoff Cons. Engrs., 806 Park Ave. Bldg., Detroit 26, Mich.

This firm is in need of Analysts, Estimators, Apprentices and Statistical Typists. Also local sales Representatives. Male or Female. Construction Survey Co., 101 Park Avenue, New York 17, N. Y.

Civil Engineer with sanitary engineering experience or education wanted by Consulting Engineering Firm. Write P-5867, Engineering News-Record.

Wanted—Experienced Bridge Foreman for position with expanding Michigan contractor. Applicant must be able to handle men and organize work on bridge construction. Write, stating experience, age, and references, plus expected beginning salary: Canonie Construction Co., South Haven, Mich.

Wanted: Carpenter foreman thoroughly familiar with bridge construction. Must understand plans. Respond to publication. P-6123, Engineering News-Record.

Gunite man experienced in concrete repairs and pressure grouting. P-6170, Engineering News-Record.

POSITIONS VACANT

Superintendent experienced in heavy sewer & water main construction under difficult conditions, by N. Y. State Contractor. Permanent position for qualified, responsible person looking for advancement with established firm. P-6165, Engineering News-Record.

EMPLOYMENT SERVICES

Better Positions—$6,000 to $15,000. Want a substantial salary increase, more opportunity or different location? This national 47 year old service connects you with best openings. You pay us only nominal fee for negotiations: This we refund when employer pays placement fee. Present position protected. In complete confidence, write for particulars. R. W. Bixby, Inc., 559 Brisbane Bldg., Buffalo 3, N. Y.

Engrs. Designers, Draftsmen, all fields Chem. Metallurgists, I.E.'s use our national coverage. Guilford Personnel Service, 502 American Bldg., Balto. 2, Md.

POSITIONS WANTED

Controller, Ch. Accountant, Office Manager, shirt sleeve worker, seeks tough, top office assignment. 23 years experience—11 overseas. Diversified heavy and medium construction. Fluent Spanish. Available now. A-1 references, character, potential and reliability. PW-5994, Engineering News-Record.

Bricklayer Foreman 27 years experience in industrial, commercial and residential construction. Preference, desire position in New Jersey area. PW-5998, Engineering News-Record.

Construction Profit Maker—estimate, purchase, expedite, handle owner contacts. PW-5997, Engineering News-Record.

Avail. Nov. 1st. C.E., 10 yrs. exp. in design, testing & placement of soils, asphalt & concrete on airfields & hgwys. Wes Blank, Jr., RD-3 Box 212, Charlottesville, Va.

Construction Executive: Well versed in management of Estimating, Engineering and Construction. From Customer contact to completion of projects. (Mechanical Trades). Have following of Trained Personnel. Interested only in Profit Sharing Plan. If interested in man who can make you money, Reply to PW-6001, Engineering News-Record.

Sales Minded Engineer, 32, Graduate C.E., Multi Lingual, widely traveled. Extensive field construction experience heavy industrial, refinery projects. Administrative experience as Asst. to V.P. for construction. Desires sales or administrative position preferably overseas or West Coast. PW-6076, Engineering News-Record.

Top construction Co. V.P. and Gen. Manager, age 42, married, one son. Present company equipment in excess of $5,000,000, engaged in highways, bases, and allied construction. No design. Desirous of change, similar status, or establish your branch with same or allied operations. Gulf South states only. Same renumeration of $12,000 plus participation and usual fringes. Personal interview at convenience of principals. PW-6059, Engineering News-Record.

Accountant Comptroller experience in heavy construction, dams, roads, air field bldgs, under ground systems Major accounting special course industrial management now employed go anywhere. Age 47. PW-6173, Engineering News-Record.

POSITIONS WANTED

Senior Structural Design Engineer, Estimator, Spec. Writer. Thorough supervisory experience leading engineering & const. firms. Power plants, large industrials, waterfront structures, dams, airfields, bridges, etc. Permanent position with industrial or consulting firm wanted. M. Atl. or N.E. PW-6053, Engineering News-Record.

Construction Executive, C.E. and practical background. 25 years with leading General Contractors on management, supervision, estimating, business promotion for buildings and heavy construction. Western location. Available soon. PW-6060, Engineering News-Record.

Field Superintendent: Age 44 years. Over 20 years continuous experience in heavy grading, drainage, bituminous concrete and cement concrete pavement. Majority experience highways and toll highways of all types. Also airports, earthfill dams and earth and concrete floodwalls. Presently employed. Present salary $13,000 plus. Available 30 days. References upon request. PW-6065, Engineering News-Record, 520 N. Michigan Ave., Chicago, Illinois.

Structural Engineer, 28 years with structural fabricators, desires position with fabricator as design and short order sales representative. PW-6048, Engineering News-Record.

Young English Civil Engineer, B.Sc., A.C.G.I., Jr. E.I.C., presently completing 18 month as site engineer in charge of every aspect of construction and administration of several Canadian government radar stations, shortly returning to Europe, will be available beginning 1958 any part of Europe. Languages—good French, reasonable Spanish, a little German. Previously with consultants and contractors in England and Spain. PW-6147, Engineering News-Record.

Construction Superintendent, 38, Experience gained in heavy industry, mining and steam generating stations. Basic background electrical. Desires employment in co-ordination planning and supervision of construction projects. Desired location western Canada will consider foreign, domestic appointment. PW-6157, Engineering News-Record.

Mechanical Engineer—Recent Graduate—25 —Married. Completing Military Service 1 Nov.—Aircraft Experience—Desire Position in Southeast. PW-6152, Engineering News-Record.

Drill steel specialist—40 years old—20 years experience developed two major threads now in use on large steel. Can run any equipment or supervise shop. Can furnish best of references. Available immediately—Go anywhere. PW-6151, Engineering News-Record.

Construction Estimator, nineteen years experience in costs, quantity take-off, buying, sub-letting on industrial, public buildings, and sewage treatment plants. Eleven years with present employer. Minimum salary $10,000. PW-6168, Engineering News-Record.

Building Construction Superintendent: Industrial, Commercial, Institutional, Etc; Desires position as field supt; not an estimator. Over 25 yrs. experience, age 55; Can travel with reliable contractor, prefer Eastern States. PW-6163, Engineering News-Record.

Young Business Minded CE Concrete Pipe Plant Operation Experience to work on concrete pipe or ready mixed plant, 13 Elizabeth, Montclair, New Jersey.

(Continued on the following page)

CIVIL ENGINEERS

Positions in California State Government in a variety of locations throughout the State for recent college graduates.

HIGHWAY

Office and field work in California's dynamic highway program.

BRIDGE

Design and field work in California's multimillion dollar bridge program.

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Engineering control of water supply and waste disposal, air pollution and industrial hygiene.

Junior positions—no experience
$481 to $530 a month

Assistant positions—2 yrs. experience
$530 to $644 a month

Positions open at these levels only.
U. S. citizenship required.

SEND RESUME TO:

C. S. Warner, Supervisor,
Section E, 801 Capitol Ave.,
Sacramento 14, Calif.

POSITIONS VACANT

(Continued from preceding page)

Ambitious engineer, 23, married, completing military service desires permanent position with contractor. Have stress experience and training in equipment maintenance. PW-6149, Engineering News-Record.

Contractors Assistant available as Chief Estimator, Construction Manager or General Manager of progressive General Contracting firm. Broad experience all phases of Building & General Construction. Preference Midwest or Western Location. PW-6148, Engineering News-Record.

Reinforcing steel chief draftsman, supervise detailing for bar co., constr., or engr. P.E. design, est, selling exp. PW-6109, Engineering News-Record.

Structural Engineer—31—registered in N. Y. and Florida—wishes to relocate in Miami area—8 yrs experience in bridges and buildings. PW-6129, Engineering News-Record.

Civil Engineer—30 years in heavy construction, all phases, with contractors and consultants. PW-6094, Engineering News-Record.

Electrical Construction Superintendent and Engineer with 25 years experience desires foreign work. Can supervise all other phases of Industrial or Commercial Building. PW-6096, Engineering News-Record.

Structural Engineer—P.E. (Pa.) B.S. Archt. E. 7 yrs exper. design ind'l, educ'l, comm'l structures; supervision design & drafting; inspection. Desire responsible pos. with progressive A&E firm, East or Southeast. PW-6095, Engineering News-Record.

Civil Eng. 31, married, B.S., M.S. in structures. 6 years experience in construction and estimating. Recent graduate of accredited law school. Top fourth of class. Will consider any opportunity. PW-6117, Engineering News-Record.

Construction Management or Superintendent (Building) Age 37. Experienced Multi-Storyed housing. Industrial, schools, hospitals, churches, etc. 20 years administrative & field experience. Vicinity New York Preferred. PW-6118, Engineering News-Record.

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HIGHWAY PROJECT ALBANY AREA

Highway Field Engineers

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Instrument Men

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Write full qualification details, personal information, references and salary. Interviews arranged promptly.

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McKee has permanent opportunities for Chemical Engineers experienced in process design for Petroleum and Chemical Plants.

Send detailed resume to
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ENGINEER OF BRIDGES AND DAMS

Needed in Arizona

Administrative Experience A Requisite

Must be a registered professional engineer
Salary $725 to $900 per month

Apply to:

ARIZONA HIGHWAY DEPT.

Personnel Division, 206 S. 17th Ave.
Phoenix Arizona

WANTED:

STRUCTURAL ENGINEER BY SANITARY DISTRICT, MID-ATLANTIC STATE, YOUNG MAN, EXCELLENT OPPORTUNITY, SOME CONSTRUCTION EXPERIENCE REQUIRED. PLEASE STATE FULL QUALIFICATIONS, EXPERIENCE, REFERENCES.

P-6135, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

ELECTRICAL CONSTRUCTION ENGINEER

Extensive Experience
with rectifier
equipment
Initial location Alabama

CONSTRUCTION ESTIMATOR

With Construction
Division of large, expanding
Manufacturing Company
Location — Virginia

P-6127, Engineering News-Record
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

WANTED:

BY SANITARY DISTRICT, MID-ATLANTIC STATE, CIVIL ENGINEER WITH SOME SANITARY ENGINEERING EXPERIENCE OR SANITARY ENGINEER WITH SOME STRUCTURAL ENGINEERING EXPERIENCE. EXCELLENT OPPORTUNITY, GOOD SALARY. PLEASE STATE FULL QUALIFICATIONS, EXPERIENCE, REFERENCES.

P-6132—Engineering News-Record
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

ENGINEERS

Long established firm of consulting engineers with world-wide practice needs both beginners and experienced civil, electrical, mechanical and foundation engineers for interesting work on large dams, powerplants, and river control works. Permanent positions. Liberal employee benefits. Starting salaries dependent on qualifications. Please send complete resume to Hugo Niemi, Personnel Manager.

HARZA ENGINEERING CO.

400 W. Madison St. Chicago 6, Ill.

CONSTRUCTION ENGINEER

Graduate engineer with experience on bridges and steel structures for permanent position with growing contractor as field manager, superintendent or resident engineer on multimillion dollar projects.

P-6134, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

SOIL ENGINEER

With field experience in Earth Dam Construction and 10 years total experience in Soil Mechanics for position on Consulting Engineers Staff in Western Turkey. Expected duration 18 months. Living allowance plus small partly furnished house. Send education and experience resume with salary requirements to

P-6090, Engineering News Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SALES ENGINEERS

A major steel company has need for sales engineers to promote and sell fabricated products in middle Atlantic states. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive starting salary with company car, expenses and bonus plan.

SW-4684, Engineering News-Record,
Class. Adv. Div., P.O. Box 12, N. Y. 36, N. Y.

Highway & Bridge Engineers Designers & Draftsmen

Career opportunities for men interested in professional recognition. Excellent working conditions and employee benefits including liberal retirement program.

Openings in Pennsylvania, Maryland, Mississippi, Ohio & West Virginia.

Air Mail Resume to R. L. SHAW, *Personnel Director*

MICHAEL BAKER, Jr., INC.

BAKER BLDG. *Consulting Engineers* ROCHESTER, PA.

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EXPERIENCED EARTH MOVING EQUIPMENT SERVICE MANAGER.

UNDER 38 YEARS OF AGE.

MUST BE ABLE TO HANDLE SERVICE MANAGEMENT PROBLEMS OF LARGE SCALE OPERATION.

ONE OF WORLD'S LARGEST HEAVY EARTH MOVING EQUIPMENT DEALERS. IDEALLY LOCATED IN WORLD'S FINEST CLIMATE.

COMPANY BENEFITS AND PROFIT SHARING PLAN. SALARY OPEN.

SEND QUALIFICATIONS AND PHOTO TO

P-6083 Engineering News-Record, 1125 W. 6th St., Los Angeles, Calif.

DEPUTY RESIDENT ENGINEER

For a $40 million rockfill and concrete dam in Iraq. Two-year contract; approximately 3-year completion schedule. Family housing at site, but no local educational facilities for children. Fill type dam construction experience required—preferably rockfill. Must be fully capable of assuming duties of Resident Engineer as required. Position is available immediately. Excellent salary. Please send complete personal and experience record to Hugo O. Niemi, Personnel Manager.

HARZA ENGINEERING CO.

400 W. Madison St. Chicago 6, Ill

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Structural Draftsmen

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ALSO RECENT GRADUATES

Highway Designers

SENIORS AND INTERMEDIATE

PERMANENT POSITION

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Consulting Engineers
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With prestressed concrete design experience wanted by growing company able to offer a real opportunity to the right man. Should be familiar with production methods and construction practices. Unusual opportunity. Open on age and salary. All replies confidential. Interviews will be held in your city. Please send us information about your education, experience and present salary. Write

P-5957, Engineering News Record
520 N. Michigan Ave., Chicago 11, Ill.

PROCESS EQUIPMENT ENGINEER

To prepare process flow diagrams and equipment specifications for raw materials handling and iron and steel production facilities.

Some engineering experience required, preferably in a metallurgical industry. Operating experience desirable. Engineering degree required.

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Prefer several years or more experience in any of these fields:

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Will consider lesser experience with good educational background, including several recent graduates to round out a planned expansion program. Occasional openings for combination field men. These are permanent additions to our regular staffs.

We are professional engineers engaged primarily in design which covers a wide scope of practice. The variety and unusual character—for example, the proposed world's largest bridge project—offer excellent opportunity for professional development and advancement.

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Paid vacation, sick leave, holiday, overtime. Excellent Employee Benefits Plan provides retirement income plus life and disability insurance. Blue Cross. Moving allowance.

Please write fully,
including salary data, to

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*We are designers of the technical facilities for the Arnold Engineering Development Center, operated by our subsidiary, ARO, Inc.

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Headquarters for REPAIRS — any make — Factory Service. We will also buy your old instruments or take them in trade.

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All makes and models expertly repaired in modern shop. All work guaranteed.

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FACTORY REPAIRS

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Dept. R, Troy, New York

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Located in Ottawa, Canada. Has enjoyed a high reputation in the industry for many years. Contracting firms interested in expansion would find purchase advantageous. Investment of not more than $300,000.00 required.

BO-5996, Engineering News Record
Class. Adv. Div., P. O. Box 12, New York 36, N. Y.

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Learn latest methods to organize and run work. Prepare for the top jobs.
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Model 23TDT-122W with Allison Transmissions, GM Detroit Diesel 300 H. P. Engines, 29.5 x 25 Tires. Used only 5 months. EXCEPTIONAL SAVINGS. Offered subject to prior sale or disposition.

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ALLIS CHALMERS HD-9G TRACTO-SHOVEL LOADER

With 2 cu. yd. bucket. Also 11B3 and S8 McKiernan-Terry Pile driving Hammers.

FS-6092, Engineering News-Record
Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

WANTED WAGON CRANE USED 7-10 TON CAPACITY

25-30' Boom Gasoline Powered Preferred Rubber Mounted

Include All Details Reply

W-6113 Engineering News-Record
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Steel and reinforced concrete detailing highway spans buildings for architects engineers fabricators. SS-6038, Engineering News-Record.

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Famous Rust Prevention Formula. Make your own and save money. CAFCO, 39 Cortlandt St., N.Y.C. 7.

Contractor-Construction man with equipment. 30 years experience, all phases, tired of doing it all alone. Seeks unusual situation that can capitalize on vast experience. BO-6156, Engineering News-Record.

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Numbered Valve Markers manufactured for engineers & contractors. Free catalog, samples. Seton Nameplate Co., New Haven 15, Conn.

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Shovel Attachment

Excellent Condition

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PUMPS: 2—5 stage, 450 H.P., submersible, capacity 3000 GPM @ 500' head. 2—150 H.P., 1000 GPM @ 500' head.

SHOVELS: Bucyrus Erie 54-B diesel Shovel and Dragline. One Bucyrus Erie 120-B and one 170-B electric. One Marion 151-M.

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GYRATORY & REDUCTION CRUSHERS: All sizes.

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1½ to 10 Ton — 18" to 56" Track Gauge

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NEW 3½ Yd. Carilloy T-1 Shovel Dipper
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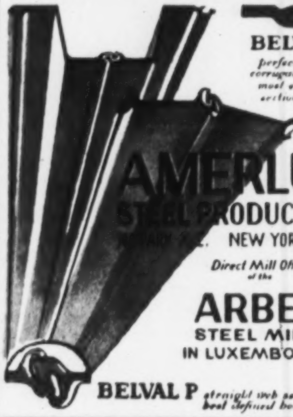

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Editorials

The Water Law Problem

THE IMPORTANCE OF WATER RIGHTS to future water resource construction and the tremendous difficulty in correcting shortcomings in Eastern states' riparian water laws were illustrated by a recent seminar on water laws held by the University of Michigan Law School in Ann Arbor (ENR Sept. 12, p. 25).

The importance of the subject was pointed up by the attendance at this small campus conference of many of the most prominent men in the water industry, alongside equally expert lawyers.

The difficulties in rendering existing riparian water laws more amenable were shown in the polite and quick annihilation by the veteran water men at the seminar of a proposed model Water Use Act painstakingly prepared by a Michigan Law School legal team. ‘It was a case of the lawyers working in an ivory tower, according to the water engineer participants.

That Eastern riparian laws are in many cases inadequate is generally agreed, however. Chief among the criticisms are the vagueness of "reasonable use" allowed by riparians, the frequent conflict between riparians' use of water and so-called "best use," and the great difficulty of making water available to non-riparians.

The lessons of Ann Arbor are obvious, we think. If riparian laws are made responsive to the times, well qualified men from the legal and engineering professions are going to have to tackle the job together from the beginning. Moreover, while a model water use act may be desirable, the major effort to revamp existing laws will have to be on the individual state level.

Engineers of Other Years

THERE ARE LESSONS for both engineers and contractors in an unusual book just published by the Engineering Institute of Canada, titled "Daylight Through the Mountain." Its subtitle is "Letters and Labours of Civil Engineers Walter and Francis Shanly." The Shanly brothers were the Irish-Canadian builders of the five-mile railroad tunnel under Hoosac Mountain in Massachusetts, finished in 1874.

This book is unusual as a rare collection of letters between two very important men in an era of railroad and canal building, the brothers Shanly. "Engineering then, as it does today, applied itself to problems in the general economy crying for a solution. In the early Nineteenth Century, the foremost need was for better transportation," says the editor, Frank Walker, in his introductory chapter. And with transportation such a problem, Walter Shanly, writer of the bulk of these collected letters, was at age 40 the general manager of what was the world's longest railroad—the Grand Trunk Railway of Canada, extending from Portland, Me., and Quebec to Sarina, Ont., and Detroit, a total of 1,096 miles.

The brothers' careers took them apart for long periods, and their letters while separated are a revelation as to how they thought, how they conducted their business, how they approached engineering problems. Yet, the editor points out at the start, it is remarkable how the letters deal with people rather than things.

One section of this book forms an exciting narrative of the construction of the Hoosac Tunnel, which the Shanlys were sought to take on after three other contractors had failed. It is told how they sought and found financial backing to do the $5 million job, and how they completed it without loss of a single life.

The real lesson of this book for today's engineers and contractors—the Shanlys were both—may be in recognizing how much there is to be learned from the past, from people of the past. It is perhaps too much the characteristic of the engineer to think in the future; yet there is so much to be learned from studying what has gone by. The Shanly brothers were contemporaries of many Canadian greats, one of whom was Thomas Keefer, the only non-American ever to be president of the American Society of Civil Engineers. Their "letters and labours" are a revealing insight into many great engineering minds of their era. And engineers in the U.S. as well as Canada can be grateful to the Engineering Institute of Canada, in Montreal, for its policy of publishing such works.

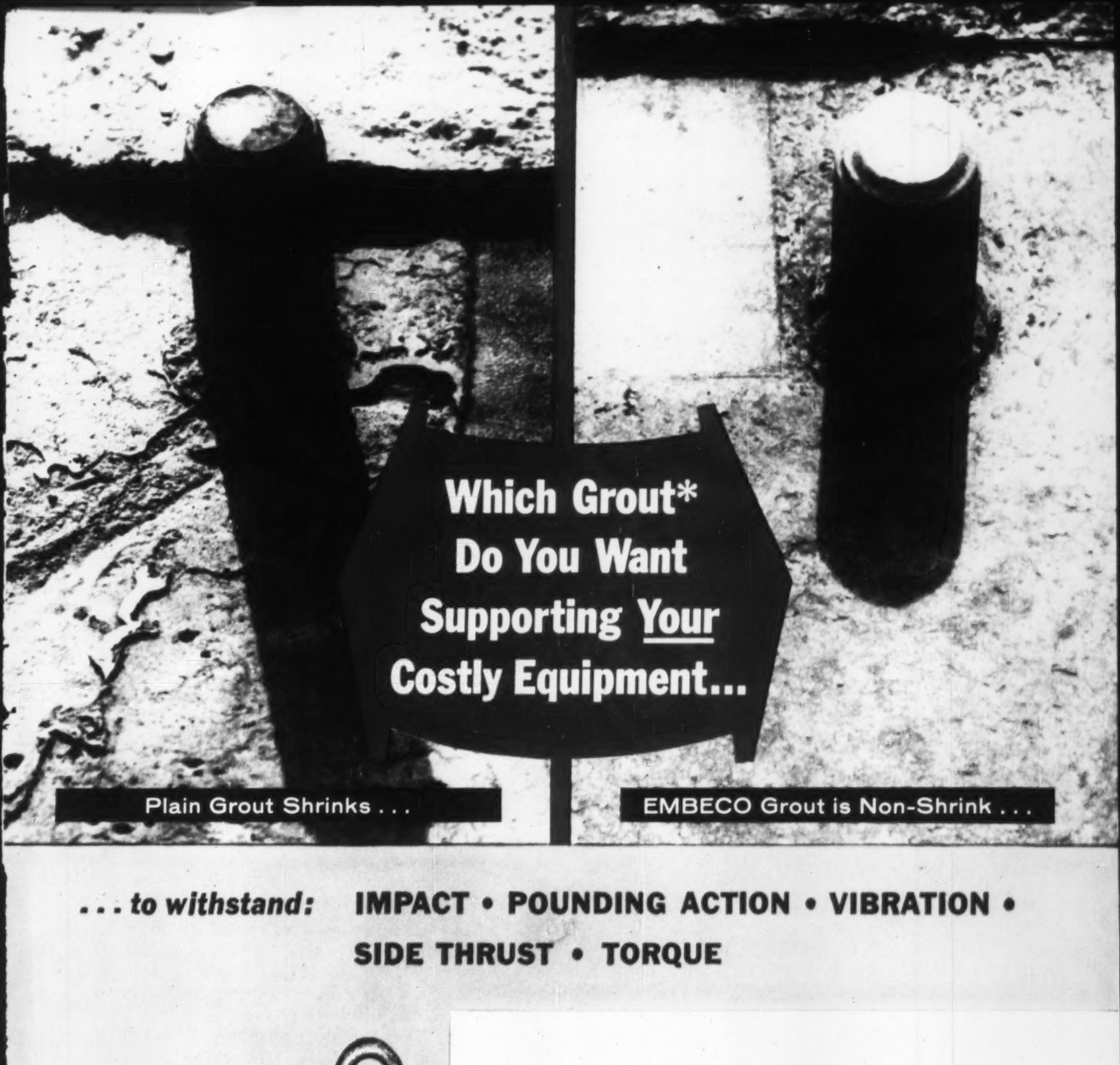
. . . And the Engineer of Today

PSYCHOANALYSTS HAVE BEEN AT WORK studying the engineer, and an industrial relations consulting firm has been studying findings of the psychoanalysts. The result is a profile of the engineer completed for the benefit of industrial relations people. It is reported in this issue (p. 23) on the theory that engineers ought to see themselves as others see them—especially when the others are their recruiters, their personnel departments, and in some cases, their managers.

This research into psychological studies is to be taken quite seriously. For if the psychoanalysts are right, and we do not question them, engineers are mostly a highly intelligent group of non-intellectuals, a socially conservative class of outdoor types, thinkers of things, rather than thinkers about people.

The above commentary on the brothers Shanly comes to mind. Their letters dealt with people rather than things.

As engineering becomes increasingly more science, less art, must engineers become more impersonal, less communicative? There are many interesting contrasts between the 19th century heroes of "Daylight Through the Mountain" and the 20th century's typical engineer as described by the industrial relations researchers. We kind of like the 19th century type.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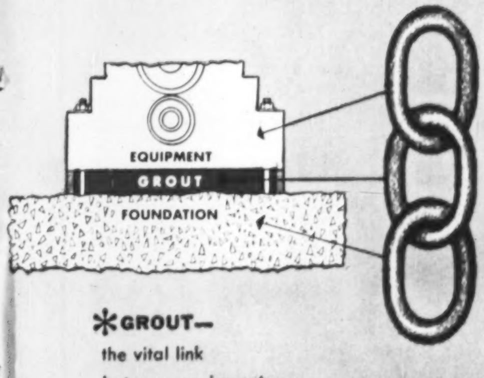
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